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RURAL HEALTH CLINICS: IMPROVED ACCESS AT A COST

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EXECUTIVE SUMMARY

The Rural Health Clinic Services Act of 1977 (P.L. 95-210) was introduced to combat a long-standing policy problem: lack of an adequate supply of physicians to serve rural America. Although physician supply in nonmetropolitan areas has been increasing, only 13.2 percent of patient care physicians reside in rural areas, compared with 24 percent of the nation's population.

The Rural Health Clinic Services Act used two strategies to increase access to primary care for rural communities at' risk of being medically underserved: (1) offering enhanced financial incentives (cost-based reimbursement) to improve physician recruitment and retention, and (2) mandating the employment of midlevel practitioners as a condition of cost reimbursement. Rural Health Clinics (RHCs) can be established only in rural areas designated as underserved by either the federal or state government, and they must provide a basic level of services.

Recently, the Rural Health Clinic Services Act has come under increased scrutiny. The large growth in the number of clinics, and the corresponding increase in payments, has led policymakers to question svhether the clinics are achieving their intended goal. A recent report by the General Accounting Office (GAO) concluded that many clinics did not reduce travel time or increase the availability of providers for Medicare or Medicaid beneficiaries, and expressed concern that the program was not being implemented in underserved areas. In another report, the Office of the Inspector General, Department of Health and Human Services (OIG) concluded there is mixed evidence regarding the impact of RHCs on access to care, but the Office is concerned about the use of cost reimbursement (an inherently difficult payment system to monitor) for such a rapidly expanding program.

HCFA contracted with Mathematica Policy Research, Inc., to evaluate (1) the impacts of the recent growth in rural health clinics on access to care, and (2) the costs of the rural health clinic program to the Medicare and Medicaid programs. The study is a pre-post examination of 18 recently established clinics, designated in 1992 and 1993, in 6 states (California, Kansas, Maine, Michigan, North Carolina, and Texas) and relies on extensive on-site interviews and an analysis of Medicare and Medicaid claims data. The results of this study follow.

Do RURAL HEALTH CLINICS IMPROVE ACCESS TO *CARE*?

Clinics Add Provider Staff

Many policymakers are concerned that the Rural Health Clinic program is being used primarily to increase revenues for existing and stable physician practices rather than to bring new providers into rural areas. Several of our study clinics did exist in some form prior to their certification as rural health clinics, but the vast majority of these clinics added staff after becoming RHCs.

Sixteen of the 18 clinics in our sample recruited one or more physician assistants or nurse practitioners. Each practitioner was new to the clinic's service area, representing a real gain in the number of provider staff present in these communities. In addition, only one-third (four) of the twelve preexisting clinics employed a midlevel practitionerprior to RHC status, suggesting that the program is an incentive for clinics to recruit midlevel practitioners. A separate analysis of data from North Carolina (the only study state that maintained historical data on midlevel practitioners) corroborate these results; the midlevel practitioner to population ratio improved in areas where clinics were added.

Clinics Increase Level of Services Received by Community Residents

Service utilization increased after RHC status was established for both Medicare and Medicaid recipients, although gains were largest for the California study clinics' Medicaid recipients. An increased willingness among providers to take Medicaid patients appears to be a primary reason for the increase in Medicaid access to care, although the pre-post design does not allow us to definitively rule out other factors.

While most clinics increased Medicaid recipient utilization, some of the most substantial gains came for rural health clinics with more populated service areas. Clinics in more populated areas showed greater gains for Medicaid recipients because they were more likely to be found in communities where a number of providers would not accept Medicaid patients. For the clinics located in smaller communities, especially those with only one physician, accepting Medicaid patients was standard practice even before RHCs were opened.

Service Areas Also Show Declines in Emergency Room. Utilization

Utilization of emergency room (ER) services decreased during our study period, especially for Medicaid recipients. This adds further support to our findings that access to outpatient services was increasing in our clinic service areas, although we caution that our pre-post analysis does not rule out other factors.

How Much Does the Program Cost?

Most of the Increase in Medicaid Program Payments Was for a Greater Volume of Services

The average clinic in our sample in 1994 cost the California Medicaid program an additional $129,364, and the Texas Medicaid program an additional $56,460. For the California Medicaid program, about two-thirds of the additional payments resulted from increases in the volume of services. About 47 percent of this increase was for increases in the level of utilization per enrollee, and 22 percent was due to the increase in the number of Medicaid recipients in clinic service areas. For the Texas Medicaid program, over half of the payments resulted from increases in the volume of services. About 46 percent of the increase in payments was due to rising Medicaid enrollments, while 8 percent of the additional payments reflect increased access to care.

The Majority of the Increases In Medicare Payments Are Due to Cost Reimbursement

The average clinic in our sample cost the Medicare program $37,141. In contrast to the two Medicaid programs, the majority of the increase in Medic&e payments (66 percent) was due to the change from paying for services based on the Medicare physician payment schedule to cost reimbursement. This difference in costs for the Medicare versus the Medicaid program reflects the smaller gains in access to care made under Medicare. Because more Medicare beneficiaries were already receiving a higher level of service, the change in the payment system cost the Medicare program relatively more since it paid higher rates for patients already serviced by the system.

Cost-Reimbursement Methods For Hospital-Based Clinics Cost More Per Encounter

The average percentage markup of cost reimbursement over physician fee schedules for hospital-based clinics was much higher than for freestanding ones. Under the Medicare program, freestanding rural health clinics were paid 32 percent more per encounter under cost reimbursement, while hospital-based clinics were paid 115 percent more.

In the recently passed Balanced Budget Act of 1997, Congress mandated a cost cap for all provider-based RHCs, except for those in rural hospitals with fewer than 50 beds. Our study included five hospital-based clinics in hospitals with 50 or more beds. Of those five, only two would have been affected by the cost cap; the other three were already being reimbursed below the cap. All the hospital-based rural clinics with fewer than SO beds were above the cost cap. As a result, the difference in payment levels for these hospital-based clinics would be very small.

Increased Clinic Payments Were Comparable to the Cost of Additional Staff

A key benefit of the RHC program is the additional providers that have located in these areas as a result of the clinic. Using national data on practitioner salaries and practice costs, we estimated that the salary and practice costs for the additional practitioners hired in California and Texas are comparable to the increased levels of payments for RHCs. Hence, additional program payments are not out of line compared to the costs of the additional staff now practicing in these areas.

STATE VIEWS OF THE RHC PROGRAM

Most Study States Provide Some Support For the Rural Health Clinic Program

We found a range of views on the rural health clinics program--but the majority of the states in our study support the program. Four states--Kansas, Michigan, North Carolina, and Texas--provide tangible support for RHCs. California does not provide tangible support for RHCs, but its highest health officials speak favorably of the program. In North Carolina, the state Office of Rural Health helps providers set up clinics and provides technical assistance. In Kansas, the state developed its own criteria for health professional shortage areas, classifying 90 of the 105 counties in Kansas as governor-designated shortage areas, and hence qualifying these counties for a rural health clinic.

Maine Actively Opposes Rural Health Clinics

Maine has a very different perception of the RHC program. In an effort to thwart clinic growth, the state is actively fighting some Health Professional Shortage Area Designations. In addition, the state Medicaid program is very concerned about cost reimbursed providers--both rural health clinics and Federally Qualified Health Centers--and feels that it is important to move these providers away from cost reimbursement to promote efficient delivery of health care. Maine's view of the programs differs because officials believe the state has relatively few underserved areas and that underserved areas that exist will not be helped by the RHC program.

MEDICAID MANAGED CARE AND RURAL HEALTH CLINICS

RHCs Had Limited Involvement with Medicaid Managed Care

Few clinics have any experience with Medicaid managed care, although most believe that it will be coming to their area soon. Of the 18 study clinics, only 4 had Medicaid managed care contracts at the time of our study. Two clinics were participating in Primary Care Case Management (PCCM) programs, receiving a monthly fee in return for serving as the designated primary care physician for Medicaid recipients; the other two were part of a Medicaid managed care program that changed their Medicaid payment structure more extensively. The clinic with the most extensive experience had suffered significant drops in revenue under the program. Most clinics feared implementation of managed care in their area.

Medicaid Managed Care Plans Provide Limited Protection for Cost-Based Providers

Five of the six study states have detailed plans for implementing managed care in rural areas in the near future. In these plans, the special reimbursement status of clinics would be eliminated or, at best, be minimally protected. Maine's managed care plan provides the lowest level of protection for RHCs, with clinics left to negotiate with managed care organizations just as any other provider does. California, Michigan, and Texas take only a slightly less drastic approach. In all three states, RHCs must gain contracts with state-contracted managed care organizations (MCOs). In these states, however, some protections--though minimal--are available. Kansas' current 1915(b) program offers the greatest protection to RHCs. Under the program, RHCs may choose to participate in the Primary Care Case Management program and receive cost reimbursement, contract with an HMO for a negotiated rate, or not participate in managed care at all.

DISCUSSION

The analysis of the sample of 18 clinics suggest that the rural health clinic program is effectively achieving its goal. The program is increasing access to care among Medicare and Medicaid beneficiaries at a substantial, but not unreasonable, cost. Yet, at the same time, the program is attracting much criticism. While most health care providers grapple with decreasing federal reimbursement rates and increasing pressure to improve efficiency, this program carves out a subset of providers and allows them to be paid under cost reimbursement--a payment method that enhances federal reimbursement rates and allows for some inefficient provision of services. It is not surprising that policymakers--especially those trying to control costs or representing areas that cannot qualify for the special status--have carefully scrutinized the program. As with all programs, problems exist; but the benefits should not be overlooked.

IS THE RHC PROGRAM THE APPROPRIATE POLICY APPROACH?

The final question is whether the strategy of providing cost-based reimbursement to providers in underserved rural areas is the appropriate policy approach to improving access to health care. Many state officials believe what this study confirms--rural health clinics do improve access to care. But is this the most appropriate way to achieve that goal?

One issue raised in several states concerns whether it is equitable that enrollees in underserved areas be given a benefit that is not necessarily available to those in other areas. As officials in both California and Maine pointed out, this program works because it increases Medicaid reimbursement to providers. However, if Medicaid reimbursement levels are so low as to cause providers to avoid Medicaid recipients, why should payment levels be increased only in those areas that can prove they have a shortage of health care providers? The implicit assumption in this policy is that Medicaid recipients in non health professional shortage areas can access health care services; an assumption that some Medicaid officials doubt. In fact, the Physician Payment Review Commission (1991, 1994) reports that most studies show that increased Medicaid fees improve access to care for recipients. This suggests that the more relevant policy issue is whether Medicaid payment rates are too low to provide adequate access to care for all Medicaid recipients.

Another issue for consideration is whether the RHC program is the most appropriate policy for sustaining small rural hospitals. The RHC program is helping improve the financial status of small rural hospitals. Recent legislation, which exempted the smallest rural hospitals from the cost cap, is an explicit decision to retain special status for these facilities. Other federal programs, like the Critical Access Hospital legislation just passed as part of the Balanced Budget Act of 1997, are explicitly designed to help small hospitals while forcing them to make hard decisions to limit costs. Critical Access Hospitals, for example, will have restrictions on the number of beds they have and on their distance from other health facilities. The RHC program, by allowing small rural facilities to avoid making these decisions by keeping unlimited cost reimbursement, may be working at cross purposes to these other federal programs.

One goal of the RHC program is to increase the number of providers available in rural areas. However, other federal programs, like the National Health Service Corps, have similar policy goals.

An examination of the effectiveness of all these programs might help the federal government decide which of these programs is most successful, given their relative costs, or target the programs to the areas where they will be most effective. Although the cost of the RHC program is reasonable, if the program overlaps with other federal programs, the cost may not be deemed reasonable.

The maldistribution of health care providers has long been a problem in the United States. The problem has persisted despite policymakers' repeated attempts to solve it. The Rural Health Clinics program has demonstrated that it can effectively increase providers in underserved areas. This success should not be overlooked when changes are made to solve the program's problems.

I. OVERVIEW

The Rural Health Clinics Services Act of 1977 (P.A. 95-210) was designed to improve access to health care for Medicare and Medicaid enrollees in underserved rural areas. By providing cost-based reimbursement for designated clinics, and by requiring that clinics employ midlevel practitioners, the program is intended to increase the number of health care providers in underserved areas, help keep these providers financially stable, and improve overall access to care for enrollees. In the past few years, as rural health clinics have expanded rapidly, policymakers are asking whether the program is actually achieving its goals, and at what cost. The fact that the program was recently featured on NBC Nightly News' "Fleecing of America" (billed as an examination of "how your government wastes your money") indicates the current level of contention over the Rural Health Clinic program.

The Health Care Financing Administration (HCFA) contracted with Mathematica Policy Research, Inc. (MPR) to evaluate the impact of the recent growth in the number of rural health clinics on access to care and on Medicare and Medicaid program costs. This study is a pre-post examination of 18 recently designated clinics in six states. The study relies on extensive on-site interviews and an analysis of Medicare and Medicaid claims data for enrollees in the clinics' service areas.

This chapter provides background information on the Rural Health Clinic (RHC) program. Included are a discussion of the program's legislative history, an overview of the characteristics and growth in the number of rural health clinics, and a review of several effectiveness studies.

A. Program Background and Recent Changes

The RHC program addresses a long-standing policy problem: the lack of an adequate supply of physicians to serve rural America. Although the physician supply in nonmetropolitan areas has been increasing, only 13.2 percent of patient care physicians reside in rural areas, compared with 24 percent of the population. The program addresses this problem in two ways--first, by providing stable financing for physicians who practice in under-served areas, and, second, by encouraging the use of midlevel practitioners in these areas. The RHC program is designed to encourage rural practice for both physicians and midlevel practitioners.

To qualify, an RHC must meet several criteria. Fist, the clinic must be located in a rural (defined as non-urban) area designated as medically underserved, which includes Health Professional Shortage Areas (HPSAs), Medically Underserved Areas (MUAs), and governor-designated shortage areas. Clinics are required to have a midlevel practitioner (physician assistant [PA], nurse practitioner, or certified nurse midwife) on site at least half of the time. Finally, in addition to primary health services, a clinic must offer basic laboratory services; "first response" emergency care; links to radiology, inpatient care. and specialty care services; and written clinical protocols.

RHCs can be either provider-based (typically part of a hospital, but also a skilled nursing facility or home health agency) or freestanding. Both currently receive cost-based reimbursement for services provided to Medicare and Medicaid enrollees, although reimbursement for freestanding clinics is capped, whereas, at present, provider-based clinics have no cap. [1] Freestanding clinics also are required to meet productivity standards, but provider-based clinics are not. Until this year's legislation, once certified, a clinic maintained its status as an RHC even if its county or part-county area lost its designation as medical underserved.

'This will change shortly in response to recently passed legislation.

In response to concerns expressed by the HCFA and by other policymakers, Congress modified the existing Rural Health Clinic program under the Balanced Budget Act of 1997. Several changes to the RHC program are designed to ensure that clinics are located in truly underserved areas. The new law requires that RHCs must be located in areas whose shortage area designations have been reviewed within the previous three years. The new law allows an exceptions process; clinics located in obsolete shortage areas may remain if they establish that they provide essential primary care services. HCFA is preparing to implement this new provision in two phases, the first for new RHC applicants and the second for existing clinics. Regulations are now being drafted for this purpose. In addition, clinics may still receive a temporary waiver from the requirement that they have a midlevel practitioner on staff, but the waiver will be allowed only for clinics that have already been certified. In other words, a clinic can no longer receive the RHC designation without having a midlevel provider on staff. Finally, RHCs will now be required to have a quality assessment and performance improvement program.

Two changes were targeted directly at the cost-based oayment mechanism. First, provider-based RHCs will now be subject to the same capped rate per visit as freestanding clinics, except for those affilated with rural hospitals with fewer than 50 hospital beds. Second, Medicaid is no longer required to pay 100 percent of costs.[2] This requirement allows reimbursement at 95 percent of costs in the year 2000, then decreases the percent of costs paid each year until 2004, at which time there will no longer be a requirement for Medicaid reimbursement based on costs. Medicare reimbursement

[2]Note that we found in this study that some state Medicaid officials never agreed that they had to pay 100 percent of costs, as it wasn't explicitly stated in the original legislation. In Texas, clinics were paid 94.6 percent of costs in 1994 and were down to 76.5 percent this past year. Michigan was also considering paying less than 100 percent of costs.

will continue to recognize 100 percent of costs and will continue to reimburse at 80 percent of costs, with beneficiaries paying the other 20 percent as a copayment.

B. RURAL HEALTH CLINIC CHARACTERISTICS

To assess the effects of the RHC program, it is important first to understand the characteristics of the clinics and their service areas. Although there has been concern that RHCs are well-staffed practices with multiple provider staff, in fact the typical rural health clinic employs a small number. of physicians and midlevel providers. We used data collected at the initial certification for rural health clinics (available through HCFA's Online Survey Certification and Reporting System) which show that the median rural health clinic employs only 1.8 full-time health care practitioners (this number reflects both physicians and midlevel providers on staff [Table I. 1]). The average (as opposed to the median) clinic has 2.9 full-time health care practitioners, reflecting the small number of clinics that enter the program with large staffs. Overall, however, the vast majority of clinics are minimally staffed when they open, and some are staffed only part-time.

In terms of provider availability, rural health clinics are located in counties that are similar to rural counties nationwide and to counties with designated Health Professional Shortage Areas (HPSAs). On average, the clinics' counties had slightly fewer physicians per 10,000 population than rural America (3.1 versus 3.3) and slightly more than all rural counties with HPSAs (3.1 versus 3.0; see Table 1.2) All three areas had the same number of short-term general hospitals, while total Medicare reimbursements per beneficiary in 199 1 (before most clinics had opened) were slightly higher in counties with active clinics than in all rural areas or HPSA-designated areas.

Rural health clinics are found in counties more densely populated than the average rural area. The median population density of the RHC counties is 3 1 percent higher than all rural counties nationwide and nearly 45 percent greater than HPSA-designated counties. These differences are

TABLE I. 1

CHARACTERISTICS OF RURAL HEALTH CLINICS
(Active Clinics Only)

Percentage Provider-Based	46.6%
Percentage Freestanding	53.4%
Median Number-of Physicians Employed (Mean)	1 (1.4)
Median Number of Nurse Practitioners and Physician Assistants Employed (Mean)	1 (1.5)
Median Total Health Care Providers Employed (Mean)	1.8 (2.9)

SOURCE: Online Survey Certification and Reporting System, data through November 20, 1997 (N = 3,484).

TABLE I.2

AREA CHARACTERISTICS OF RURAL HEALTH CLINICS

	Counties with Active RHC (N = 3,484)	Rural Whole or Part County HPSA[a] (N = 1,484)	All Rural Counties[c] (N = 2.265)
Physicians per 10,000 People[b] (Median)	3.1	3.0	3.3
Number of Short-Term General Hospitals (1993) (Median)	1	1	1
Total Medicare Reimbursements per Beneficiary (1991) (Median)	$2,847	$2,771	$2,740
Per Capita income (1993) (Median)	$15,605	$15,050	$15,581
Percent 65 Years or Older (Median)	15.3	15.1	15.5
Population per Square Mile (1990) (Median)	35.5	24.4	27.1
Percentage in Frontier Counties (Fewer than 6 Persons per Square Mile)	8.2%	19%	17%

SOURCE: OSCAR and Area Resource File, all clinics opened through November 1997. Counties with multiple clinics are weighted by the number of clinics.

"As of 6/95.

[b]Number of physicians is the sum of nonfederally employed primary care physicians, defined as family and general practice MDs (1994) and active, family practice, general pediatrics, general internal medicine, and obstetrician/gynecologists DOs (1995).

'Nonmetropolitan areas.

even larger when comparing mean population densities (57 and 79 percent, respectively). In addition, only 8 percent of the clinics are located in "frontier" counties (those with six people or fewer per square mile), whereas frontier areas comprise 17 percent of all rural counties and 19 percent of all HPSA-designated counties.

Despite their higher population densities, the clinics' areas have no particular advantages. The median per capita income and percent elderly for the clinics' counties are similar to all rural counties nationwide. Although HPSA-designated counties have slightly lower per capita incomes and percent elderly, the data suggest that the two groups are fairly similar.

In sum, the data suggest that rural health clinics have been established in larger, more densely populated areas. Indeed, 6 of the 18 clinics from our study visits are located in service areas with 50,000 or more people.[3] There seems to be little else that distinguishes these counties from all rural counties nationwide, however. These clinics are being established to serve rural populations, but not intentionally to serve areas overly disadvantaged in terms of population characteristics or income.

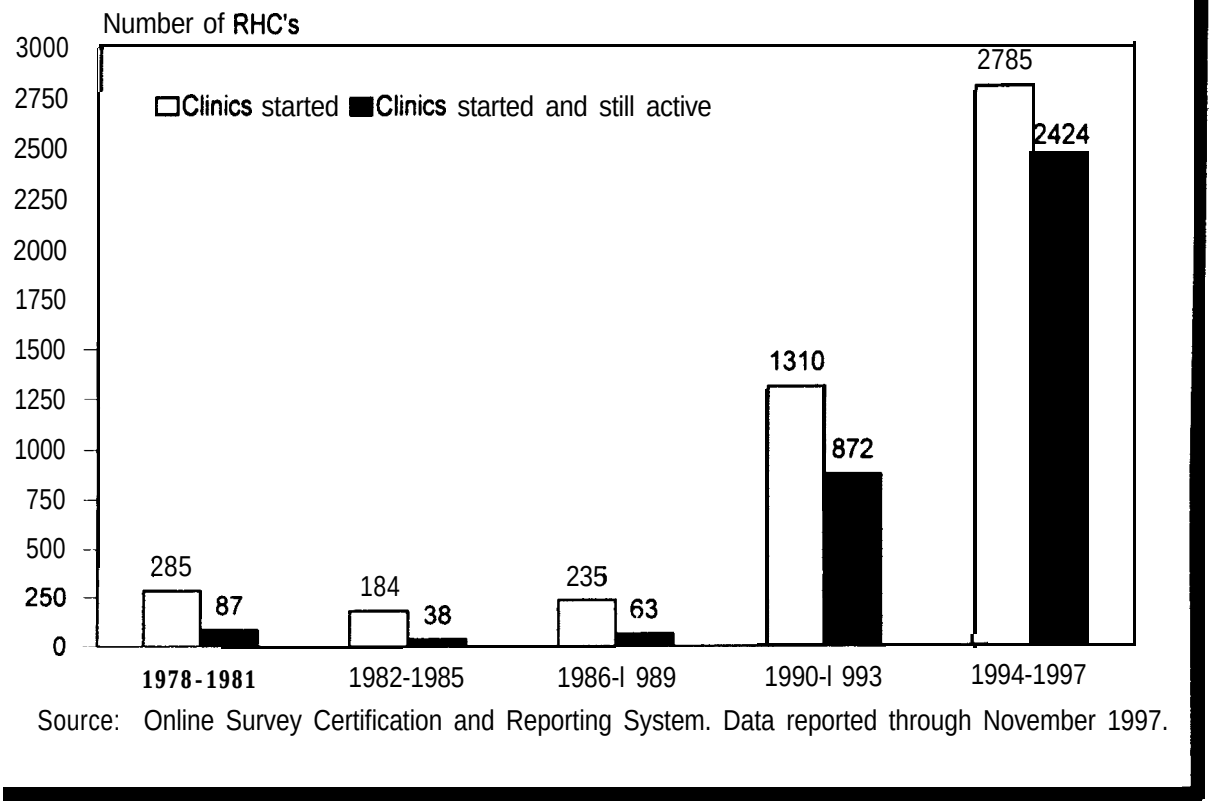
C. GROWTH IN THE RURAL HEALTH CLINICS PROGRAM

After years of gradual expansion, growth in the number of rural health clinics accelerated in the 1990s. In October 1990, only 581 rural health clinics existed nationwide--a far cry from the 2,000 projected by policymakers at the time the act was passed (Travers and Ellis 1992; and Office of

[3]We used a broad definition of clinic service areas, including the populations of all zip codes which held at least 5 percent of clinic patients in 1994. In many cases, this area expanded beyond the clinic's city, town, or census area, which must have fewer than 50,000 people in order to qualify as rural.

FIGURE I.1

NUMBER OF RURAL HEALTH CLINICS



Source: Online Survey Certification and Reporting System. Data reported through November 1997.

Technology Assessment 1990). Since 1990, the number of clinics has increased nearly sixfold to 3,484 active clinics in 1997 (Figure I. 1).[4] A new component of this growth is an increase in the number of provider-based clinics, from 29 clinics in 1989, to 295 in 1993, and 1,622 in 1997. Researchers and policymakers have suggested a number of reasons for the growth in the number of clinics, some of which we were able to verify during our site visits with clinics and state officials.

Clinics find advantages in current cost-based reimbursement methodology Some consultants attribute the initially low levels of participation in the RHC program to low Medicare reimbursement rates, which were capped at a maximum of $27.30 per visit for the first five years of the program, but were increased to $32.10 in 1983 (Travers and Ellis 1992; and Lutz 1993). In fact, many of the clinics that opened during these early years did not survive; only 29 percent of the clinics that opened between 1978 and 1986 were still active in 1996. In 1987, the rates were increased again, with future increases tied to Medicare's Medical Cost Index; by 1995, reimbursements rates were $55.53 per visit. These increasingly generous payment levels under the current cost-reimbursement methodology appear to have contributed to clinic growth.

Another reason for clinic growth is that cost-based reimbursement methodologies offer considerably more flexibility and revenues than the traditional fees physicians and midlevel practitioners are likely to generate. In 1993, the typical maximum Medicaid fee was $36 for a new patient and $24 for an established patient; Medicare fees were approximately one-third higher (Physician Payment Review Commission 1994). Thus, in most areas, the capped RHC rates are higher than those for a standard office visit. Moreover, the key financial advantage to the RHC program is that the same rates are paid for midlevel practitioners (who traditionally have been paid even less in the fee-for-service system), and that physicians now can be paid for supervising midlevel practitioners,

[4] Data through November 1997.

a service for which they were not reimbursed previously (Physician Payment Review Commission 1993).

Changes in practice patterns in rural areas. Rural health clinics have become increasingly popular among rural hospitals as these hospitals recognize that ambulatory care is the key to their survival. For example, a large proportion of Rural Health Care Transition Grant Program grantees used grant funds to open rural health clinics as a way to improve the hospitals' financial stability (Wooldridge et al. 1994). Because the per-visit costs of provider-based rural health clinics have not been capped, these facilities may receive higher reimbursements than would a traditional hospital outpatient department.

Managed care is rapidly changing the health care delivery system in urban areas and is also beginning to change rural practice patterns. Throughout the United States, physicians are joining larger practices, hospitals are affiliating with physician groups to gain referral sources, and primary care providers are finding themselves in more powerful positions as they become the gatekeepers to the country's health care resources. These trends are true in rural America as well. Many rural physicians are changing the organization of their practice and affiliating with health care systems. At the same time, it makes practical sense for physicians to change their practice to a rural health clinic. In each of these settings, the enhanced reimbursement for rural health clinics facilitates some of these changes.

Some ***states*** actively ***encouraged growth in clinics.*** Another key factor in clinic growth is the emphasis state officials have placed on the program, reaching out into the rural areas to inform rural health care communities about the program's benefits, In four of our six study states--Kansas, Michigan, North Carolina, and Texas--the state has taken an active role in developing rural health clinics. North Carolina has the most active program; its Office of Rural Health provides technical

assistance and even subsidizes some clinics in an effort to ensure their longevity. In Kansas, the Bureau of Local and Rural Health Systems has obtained governor-designated shortage areas for 90 counties in the state in order to allow RHCs to open in these areas. (No governor-designated shortage areas existed before 1991.) The state also helped increase the number of Health Professional Shortage Areas from 11 to 4 1. In Michigan, concerns over the ability to maintain rural health care capacity in the advent of managed care led the Michigan Department of Health to actively support designation of areas as Health Professional Shortage Areas and to advocate the expansion of rural health clinics. In Texas, the state's Center for Rural Health Initiatives published a guidebook which it distributed to help rural areas establish rural health clinics.

In Texas, a state with an enormous growth in clinics (458 clinics opened between 1989 and 1995), changes in the midlevel practitioner laws contributed to clinic growth. Prior to 1989, Texas strictly limited midlevel providers' scope of practice. This limitation made it infeasible to employ midlevel providers--especially physician assistants. Eliminating the restriction made it feasible to operate a rural clinic. Because 205 out of 254 counties in Texas are rural, substantial growth in the program was made possible (Tessen, 1994).

D. PRIOR STUDIES ON THE RHC PROGRAM

The recent growth of the RHC program has led to several studies of its effectiveness. The most recent studies, conducted by the Office of the Inspector General (OIG) for Health and Human Services and the General Accounting Office (GAO), find mixed evidence of the program's success. Both offices have expressed concerns about whether the program is improving the availability of health care in rural areas. Both agencies are also concerned about the program's use of cost-based reimbursement.

The OIG study questions the ability of the RHC program to improve access to care for several reasons (OIG 1996). First, some clinics are not in truly underserved areas. Second, there may be duplication of providers caused by the RHC program. Third, some providers in rural areas are quite stable and converting to RHC status for additional revenue when in fact they would stay in the area regardless of payment levels. Although this report notes that some providers appeared to have improved access to care in their areas, the report has no quantitative data to support it.

The General Accounting Office (1996) studied RHCs in four states, and examined whether the RHC program was serving a Medicare and Medicaid population that would otherwise have difficulty obtaining primary care. Its access measures were: (1) the availability of providers in RHC catchment areas before and after the RHC was certified and (2) the travel distance between health care providers and enrollees in RHC catchment areas before and after RHC certification. GAO argues that the RHC program does not target providers in isolated rural areas, but rather is often used to benefit clinics in areas that already have an established and stable provider network in place. Like the OIG , GAO is concerned that the RHC program is being used primarily by existing physician practices that need no additional incentives to maintain their practices. The GAO concludes that most of its study clinics did not use the benefits of the RHC program to increase provider staff or to otherw' ~ expand access to the underserved population in their communities.

Both reports express concern over payment issues. The OIG study cites problems with the cost reimbursement methodology. The study finds that cost-based reimbursement is difficult to administer and monitor. In addition, monitoring difficulties could contribute to inappropriate billing by clinics. The GAO study is concerned that reimbursement rates are higher than needed to maintain financial viability, partly because HCFA was reimbursing provider-based clinics at cost rather than setting

maximum payment limits, and partly because HCFA did not establish appropriate audit screens for reasonable costs.

The recent controversy over the RHC program, combined with the findings of the OIG and GAO reports, led Congress to hold hearings on the program in February 1997. The hearings were an attempt to gather information about the success of the program before Congress made decisions regarding substantial program changes (which were enacted under the Balanced Budget Act of 1997). There was a consensus among those testifying that many of the difficulties with the program. lie in the way rural and underserved areas are currently designated, issues that were addressed in the new legislation.

While everyone who testified believed that some rural health clinics improve access to care, no one had data that effectively measured access. Some of those who testified believed that programs operating in more isolated areas were the ones most likely to be improving access to care for enrollees. At the same time, there was general agreement that clinics located in large service areas with multiple provider networks, and those that simply represented conversions of existing physician practices, were probably least likely to improve access to health care.

E. Overview of Evaluation Design

In response to the rapid growth in clinics and the concerns that RHCs may not be meeting their intended goals, the HCFA contracted for an evaluation of the RHC program. This evaluation focuses on three key questions:

1. Do newly established rural health clinics improve access to care?

2. How much does the program cost?

3. What are the implications for rural health policy?

Our study examines 18 RHCs in 6 states (California, Kansas, Maine, Michigan, North Carolina, and Texas). The full details of the study design are described in Appendix A of this report, but we outline the key study characteristics below. Table I.3 provides an overview.

To examine RHC effects on access to care, we selected 18 rural health clinics newly designated in 1992-1993. The clinics were selected to represent provider-based and freestanding clinics equally. We purposely selected some clinics with large provider staffs and in areas of special interest. In addition, we conducted a pre-post comparison of outpatient and emergency services utilization (in 1991 and 1994) by Medicare and Medicaid enrollees in clinics' service areas. We also conducted a pre-post comparison of the number of health care professionals per capita, supplementing the comparison with detailed information collected during a site visit to each clinic. During the site visits, we conducted interviews with both clinic staff and other community providers to fully assess a clinic's impact.

To measure the impact of program costs, we conducted a pre-post analysis of costs for services at the same study sites. The program costs during this period will rise for a number of reasons. We divide the increase into three components: (1) the change in costs due to changes in utilization per enrollee; (2) changes in costs due to the changes in the number of enrollees that are receiving care due to increases in the Medicare and Medicaid population; and (3) changes in costs due to changes in payment method. We measured these cost effects on a service area level and multiplied by the clinic's market share to obtain a per-clinic estimate.

Finally, to examine rural policy issues--particularly, how states view the RHC program and how they are incorporating clinics into Medicaid managed care programs--we conducted site visits to six states: California, Kansas, Maine, Michigan, North Carolina, and Texas. We interviewed

TABLE I.3

OVERVIEW OF RESEARCH QUESTIONS, METHODS, AND DATA SOURCES

Research Questions	Methods	Data Sources
Access to Care		
Has the supply of physicians. physician assistants, or nurse practitioners changed significantly?	Process analysis; pre-post comparison of physicians and midlevels per capita	Inlet-views with state rural health offices, health professional organizations, state public health officials, North Carolina Manpower Data and Area Resource File
Has the growth in clinics led to more successful recruiting and improved retention of these practitioners in rural areas?	Process analysis	Interviews with health professional organizations. clinic administrators, hospital administrators, health professionals
To what extent are clinics providing services for indigent and underserved populations? Has rural physicians' participation in Medicare and Medicaid increased? Are rural physicians accepting new Medicaid patients?	Process analysis	Interviews with local public health officials (including WIC directors and local public health nurses), state Medicaid officials, clinic managers, providers
Are rural health clinic services substituting for hospital outpatient and emergency room services? To what extent are they substituting for visits to nonrural health clinic physicians. and what is the impact on cost and quality?	Pre-post comparison of number of hospital outpatient visits, emergency room visits, physician office visits. and clinic visits per beneficiary in clinic market areas; process analysis	Medicare and Medicaid claims data; interviews with clinic managers and providers, local hospital personnel. local public health departments, and other local physicians
Are clinics making effective use of midlevel practitioners? Are they having trouble recruiting midlevel practitioners? Did the OBRA 1990 reduction of time required by midlevel staff affect clinic viability and growth?	Process Analysis	Interviews with clinic managers, midlevel staff, health professional organizations
Cost Issues		
How much do rural health clinics cost federal and state governments?	Cost simulation; process analysis	Medicaid and Medicare claims data; cost report data; RBRVS Payment rate file; state procedural rate file; interviews with clinic managers, Medicaid officials and consultants
Issues for Rural Health Policy		
What are the primary reasons for the recent rapid growth in rural health clinics? What issues affect the growth patterns in provider-based versus independent clinics?	Process analysis	Interviews with state Medicaid officials, state associations. rural clinic managers, physicians, and hospital administrators
What roles have Medicare and Medicaid payments played in the viability of clinics and growth in their numbers? What proportion of rural health clinic payments comes from Medicare and Medicaid? What are the relative payment amounts for other payers?	Process analysis	Rural health clinic cost reports (Medicaid and Medicare), interviews with rural clinic managers, physicians, and hospital administrators
To what extent and how have clinics funded the provision of charity care?	Process analysis	Interviews with clinic managers, health care providers, and hospital administrators (for provider-based clinics)
What are the issues in the interactions of rural health clinics and Medicaid managed care plans?	Process analysis	Interviews with Medicaid personnel and clinic managers

HCFA = Health Care Financing Administration; RBRVS = Resource Based Relative Value System; WIC = Special Supplemental Food Program for Women, Infants, and Children

officials from the state's Medicaid office, Office of Rural Health, and other associations identified as being involved in the Rural Health Clinics program.

II. EFFECTS OF RURAL HEALTH CLINICS ON ACCESS TO CARE

One of the strongest concerns about the Rural Health Clinic (RHC) program 'over the past few years is that some designated clinics may not be substantially improving access to care in their service areas--the major goal of the original legislation. As noted in Chapter I, recent reports by the General Accounting Office (GAO) and the Office of the Inspector General (OIG) both express concern that some clinics may not be using the RHC program to expand staff or treat underserved Medicare and Medicaid patients. The GAO study, however, focused on geographic access to care, measuring the distance enrollees had to travel for care and whether other providers already practiced in the clinic's service area. In this study, we measure changes in service utilization for Medicare and Medicaid beneficiaries within our clinic service areas (as defined by the claims data), and whether the overall number of health care providers increased after a clinic opened. We find that the rural health clinics studied used the program to expand clinic staff, while Medicare and Medicaid beneficiaries in the clinic service areas receive more services after the rural health clinics had been certified.

Our study of the effects of the Rural Health Clinics program on access to care relies on an in-depth analysis of 18 rural health clinics. The clinics were selected from a stratified sample of all rural health clinics. The stratification included a split of half provider-based and half freestanding clinics, four clinics with larger provider staffs. two clinics located in frontier areas, and one clinic in a county with a persistent poverty classification. (Table II. 1.) We spent a day on site at each clinic, talking with physicians, midlevel practitioners, clinic managers, local hospital administrators, and local public health officials. We also analyzed claims data for Medicare beneficiaries (for all

TABLE II. 1

DISTRIBUTION OF PROVIDER-BASED AND FREESTANDING CLINICS

State	Provider-Based	Freestanding
California	1 large clinic 2 small clinics	1 large clinic 3 small clinics
Texas	1 large clinic 3 small clinics	1 large clinic 2 small clinics (1 frontier)
Kansas	1 small clinic (frontier)	
Michigan		1 small clinic
Maine		1 small clinic
North Carolina	1 small clinic (poverty location),	
Total	**9** clinics	9 clinics

18 clinics) and for Medicaid beneficiaries (for the 14 clinics located in Texas or California). to determine whether enrollees of these programs received a higher level of services after the rural health clinic was established. The analysis is a pre-post study design; the weakness of this design is that we cannot definitively attribute any changes we observed specifically to the RHC program. The extensive on-site interviews, however, corroborated the data analysis, making us more confident that the effects we report are the result of the RHC program.

To determine whether the clinics improved access to care, we addressed the following questions:

1. Did the clinics improve provider availability and stability?
2. Did the clinics improve utilization by Medicare and Medicaid recipients?

A. PROVIDER AVAILABILITY AND STABILITY

Many policymakers are concerned that the RHC program is being used primarily to increase revenues for existing and stable physician practices rather than to bring new providers into rural areas. Because the program was implemented to increase access to care in rural areas by improving provider availability and stability, policymakers worry that conversions of existing practices to rural health clinics represent only increased revenues for providers already well established and financially stable, rather than real gains in the number of providers in rural areas and in their retention rates. Indeed, a number of our study clinics (twelve) did exist in some form prior to their certification. The vast majority, however, added staff after becoming a rural health clinic. Sixteen of the 18 clinics we visited experienced a net gain in their overall number of providers, bringing new physicians and midlevel practitioners to their communities.

1. Physician Staff

The evidence is mixed on whether rural health clinics increase the number of physicians. More than one-third (seven) of the study clinics added physician staff after becoming a rural health clinic. Many of these clinics attributed their ability to recruit new providers to increased financial stability under the RHC program, indicating that the increased revenue from the program allowed them to offer what they termed "reasonably competitive" salaries. These salaries ranged from $70,000 to $140,000 a year (compared with a national average for family practitioners of $133,000). Several clinics that had recruited a physician claimed that they would not have been able to offer that salary before receiving RHC status. A few other clinics noted that, to recruit a physician, they would have offered a salary in that range regardless of their reimbursement levels; but they questioned their ability to stay afloat financially while doing so under standard Medicaid and Medicare reimbursement rates.

Clinics in both extremely rural and more populated areas believed that the RHC program had helped recruit physicians. A frontier clinic in west Texas was staffed by a family physician who has been practicing in the area for 40 years; the next nearest physician was 30 miles distant. Although the clinic's immediate service area was relatively unpopulated (with 4,800 peoplt ɯ the county), the local hospital and residents were concerned about having only one, elderly physician in town. The hospital credits the RHC program with allowing it to convince the elderly doctor to merge his clinic with the hospital and to add a physician to share the patient load and coverage of the emergency room. According to the hospital administrator. the RHC program enabled the hospital to offer a competitive physician salary.

A much larger clinic, this one in a more populous area in northern California, also credited the RHC program with making it feasible to hire an additional physician. This group practice of three

pediatricians was well established in the area; but, as the only practice that took children with Medicaid insurance coverage, it was overburdened. The practice used its increased Medi-Cal reimbursement (from $16 per visit under fee-for-service Medicaid to $53.89 under the RHC program) to hire a fourth pediatrician, who expanded the clinic's patient base.

We used national data on the number of physicians in rural areas to examine the physician-to-population ratios in rural counties where RHCs opened.' While slightly more than one-third of our study sites added new physician staff to their communities, the national data suggest that the addition of an RHC in a county does not typically improve the physician-to-population ratio for that county. In fact, using national data, we found that the physician-to-population ratio declined in these areas after a RHC opened (Table 11.2). The small declines in physician to population ratios did not happen exclusively in areas where an RHC opened but instead appear to reflect state and national trends in rural areas.

We found the decreased physician to population ratio in our study sites' counties puzzling, since our site visit data would indicate a modest increase in the number of physicians. Indeed, in the site-visit counties, the median number of physicians increased. However, because the population grew even more, the physician-population ratio actually decreased. In all areas nationally where an RHC opened, the median number of physicians remained the same, but population increases caused the physician-population ratio to decline. In all rural areas nationwide, the actual number of physicians in the county declined. However, because county populations were not growing as quickly, the physician-to-population ratios declined less, relative to the counties where rural health clinics had opened. We cannot determine why the RHC county populations are growing more rapidly than

'Ideally, we would have been able to conduct this analysis for the clinic's actual service area, which was often different from the clinic's county; but our data source, the Area Resource File, reports only statistics on a county level.

TABLE II.2

PHYSICIANS IN THE STUDY SITES AND NATIONALLY

	1990	1994	Percent Change
Physician to Population Ratio in Study Sites' Counties	1:3011	1:3508	-17%
Number of Physicians in Study Sites' Counties (Median)	12	13	8%
Physician to Population Ratio Nationally for Counties Where RHC Opened Between 199 1 and 1993	1:2880	1:3145	-9%
Number of Physicians in Counties Where RHC Opened	5	5	0%
Physician to Population Ratio in Rural Counties Nationwide	1:2900	1:3070	-6%
Number of Physicians in Rural Counties	6	5	-17%

SOURCE: Area Resource File and On-Line Survey Certification and Reporting System.

those in all rural counties nationwide. It is likely that new rural clinics are established in high population growth areas to meet the expanding demand for health care services. However, we can not rule out the possibility that the establishment of a clinic may encourage economic and population growth.

Finally, it is worth noting that there were larger numbers of physicians in our study sites' counties than in all rural counties where an RHC opened nationwide. This is attributable to having used California as a study site. California counties with an RHC had more physicians than those in any of our other study states.

2. Midlevel Practitioners

While about one-third of the study clinics added a new physician, almost all hired a midlevel practitioner after becoming an RHC. Sixteen of the 18 clinics in our sample recruited a physician assistant or nurse practitioner. Each of these practitioners was new to the clinic's service area, thus representing real gains in the number of provider staff present in these communities. In addition, only about one-third of the preexisting clinics employed a midlevel practitioner prior to their RHC status; so the program served as an incentive for clinics to recruit midlevel practitioners, where otherwise, they might not have done so.

The new midlevel practitioners were. on the whole, successful additions to these rural clinics, although there was considerable turnover among these providers (see the discussion below). Most of the clinics described the relationship between their physicians and midlevels as very good, noting that the midlevel practitioner had adapted well and was building up a base of clients. In several clinics, the addition of a midlevel practitioner not only increased clinic capacity to see patients but also augmented the types of services available from the clinic. A small clinic in Maine, for example, had one male family practice physician who had been in the area for about 25 years. When his clinic

was taken over by the local hospital and converted to RHC status, a female midlevel practitioner was brought into the practice. The addition of a prevention-oriented practitioner has been important to this community. The current midlevel practitioner gives lectures in the community about women's health issues, offers a weight loss program, and has started working with women and teenagers on family planning issues. Several other study clinics described similar experiences with midlevel practitioners who added new, prevention-oriented programs for the community.

Our analysis of midlevel providers in North Carolina corroborates our site-visit evidence that the Rural Health Clinic program adds midlevel practitioners to rural areas.' The state maintains retrospective data on all its midlevel practitioners in the state, which we were able to use to examine the placement of midlevels in rural areas. By calculating the midlevel practitioner to population ratio, we determined that rural counties had greater access to midlevel practitioners after an RHC opened in their area. Between 1991 and 1993, 20 counties in North Carolina had an RHC open. In 1990, these counties had one midlevel practitioner for every 8,614 residents. In 1994, after the RHCs had opened, these counties had one midlevel practitioner for every 5,532 residents. These statistics suggest a real increase in midlevel practitioners for communities where RHCs open (Table 11.3).

The RHC program is not the only reason that more midlevel practitioners are practicing in rural North Carolina. The state has increased the number of midlevel training programs available and has its own programs to get midlevel practitioners into rural, underserved areas. The two Health Professional Shortage Areas that did not open an RHC in the study period also increased the number

'North Carolina was the only one of our study states with electronic, historical data available on midlevel practitioners.

TABLE II.3

MIDLEVEL PRACTITIONERS IN NORTH CAROLINA

	1990	1994	Percent Change
Ratio in North Carolina Counties Where a RHC Opened 'Between 1991 and 1993	1:8614	1:5532	36%
Number of Midlevel Providers (Median)	5	9.5	50%

SOURCE: **North** Carolina Health Professions Data System files and On-Line Survey and Reporting System.

of midlevel practitioners, although not to the same extent as those with RHCs. The RHC program is clearly one factor supporting midlevel practitioners in areas with a shortage of providers.

Although the largest gains in providers for new RHCs clearly came from additions in midlevel provider staff, we are not certain at this point if these providers contributed to a clinic's stability. New midlevel provider arrangements were less stable than newly added physician staff. Of the 16 clinics that brought in a new midlevel, 14 experienced turnover in these providers in the three to four years between the time when the providers were first hired and the time of our visit to the clinic. Most of these clinics were on their second or third midlevel practitioner by the time we visited them.

Much of the turnover appears related to conflicts over practicing physicians' preferences regarding the midlevel practitioner's scope of practice. Physicians were not consistent in their views on the role they wanted the midlevel practitioner to play. Some were looking for midlevel practitioners who could practice independently, whereas others were interested in midlevel practitioners who knew "how not to overstep their bounds." The reasons given most often for why a midlevel practitioner did not work out were, one, they "practiced too independently" or two, they neoded "too much handholding"--implying that the fit between the physician and the midlevel practitioner was very important to retention. The most extreme version of this conflict was a small clinic in east Texas. The clinic had been through three midlevel practitioners and was currently practicing without one.[3] The clinic physician complained that previous midlevel practitioners acted as if they were physicians, and she was generally disgruntled that the RHC program required using them.

[3]RHCs can obtain a waiver to practice without a midlevel practitioner for up to one year if they are experiencing recruiting difficulties.

Despite these apparent conflicts in working out an acceptable practice situation for midlevel providers, most of the clinics in our study were currently very satisfied with their physician assistants and nurse practitioners. Praise for the current midlevel practitioners was correlated with criticism of earlier ones, with most clinics expressing satisfaction with the practice style of their current midlevel practitioner. This suggests that when physicians take on the new task of supervising midlevel practitioners, the physicians may find some unanticipated aspects of practicing together, and there may be several trial periods before providers develop a suitable working relationship. This may also help explain why physicians do not embrace midlevel practitioners without a financial incentive to do so.

3. **Financial Stability**

The RHC program's contribution to provider financial stability appears directly related to the size of a clinic. Nearly half the study clinics (eight), including our two clinics in frontier areas, used the RHC program to support the sole physician practice in the community. Almost all of these clinics were more financially stable after gaining RHC status, although some still required additional financial support even with increased RHC reimbursement. In contrast, the 10 clinics with larger provider staffs tended to be more stable financially, both before and after their RHC designation. However, these clinics were more likely to add new provider staff.

Half of the small clinics in our study were provider-based. They described their financial status under the RHC program as "breaking even" when the hospital accounted for the revenue the clinic generated for hospital-based services (i.e., lab work and X-rays) in addition to the revenue the clinic brought in for clinic-based services. Three of these four clinics existed prior to the RHC program, all as freestanding physician practices that were losing money and in jeopardy of losing their provider staff. For all of these clinics, RHC status enabled the practices to gain financial stability.

A small clinic in central Michigan is typical. The physician who had been in practice for more than 10 years found that he was having difficulty supporting himself. The physician reports that he would have left the area because of inability to maintain a financially stable practice if the hospital had not taken over his practice and converted it to an RHC, which increased revenue enough to maintain a reasonable salary for the physician.

The RHC program also contributed to the financial stability of small, freestanding clinics. Although these clinics were freestanding, they tended to have some form of additional financial support prior to their RHC status (from a local hospital or hospital district, the state, or private community residents). None was financially solvent even after converting to RHC status. All four still required some outside financial support in order to break even, although the amount typically was small (less than $40,000). An isolated clinic in a high poverty area in rural North Carolina. for example, receives significant technical assistance and some financial assistance from its state Office of Rural Health. The clinic's RHC status decreased the amount of grant funding the clinic needs to stay financially afloat.

Increased revenues under the RHC program also benefited larger practices in more well-staffed communities. The 10 clinics in our sample with larger provider staffs all operated in areas with other physician practices. All of these clinics were currently either financially solvent or part of a hospital system that subsidized any losses (but gained revenue from other services generated by clinic physicians). Of the clinics in existence prior to gaining RHC status, most had been able to maintain a reasonable financial base without the RHC program. However, while these clinics tended to be more solvent than the smaller, more isolated practices, they were much more likely to use the RHC program to bring in new provider staff to their communities. Six of the seven clinics that added new

physicians to their-communities were among this group, and all 10 clinics added new midlevel practitioners.

A two-physician clinic in Texas provides an example of how the RHC program was used by these somewhat larger clinics. This clinic has been in existence for about 10 years and is currently one of three practices in a service area of about 18,000 people (the other two practices in the community each have one provider). Although these two physicians were able to stay afloat financially prior to the RHC program, they were unable to make a typical physician's salary from their clinic. One of them explained that he was making a salary of about $50,000 a year from the clinic and was commuting to distant towns to serve as a locurn tenens in their emergency rooms (even though he already covered his own community's ER several nights a week) to bolster his salary. The physicians' dissatisfaction with their income led them to stop treating Medicaid patients, instead treating those patients at the local hospital ER on an emergency basis. The RHC program increased clinic revenues sufficiently that providers could spend more time in their clinic and resume treating Medicaid patients. The program also helped them bring in a new midlevel practitioner who expanded the number of patients served by the clinic and has a large Medicaid patient base.

B. Level of Services Received by Community Residents

Our analysis of information gained during visits to the study sites shows that clinics increased the number of providers available in their service areas. However, a corresponding increase in the availability of care for Medicare and Medicaid recipients is not necessarily a given, as these providers may not accept these patients. To determine whether beneficiaries in these areas received more services after the RHCs were designated, we calculated an average number of encounters per year per recipient in the clinic's service area, to determine whether service utilization increased from the pre-RHC certification period (1991) to the time after the clinic was established (1994). By

measuring utilization for all services received in the service area (not just those provided by the RHCs), we are able to measure "spillover" effects of the program--that is, any change in utilization of other area providers that might result from the presence of the study RHC.[4] In fact, ten of our eighteen study clinics had other RHCs in their service areas during the study period.

We found that, uniformly, the number of encounters per Medicare or Medicaid recipient in the service area increased after the RHC was established. The effects are strongest among California Medicaid recipients, but they are present for all groups. While the pre-post study design means that we cannot definitively attribute any changes we observe specifically to the RHC program, information gained during site visits does suggest that the RHC program is, in large part, responsible for these gains.

1. Service Utilization

a. Medicaid and Medicare Beneficiaries

Utilization of services increased substantially for Medicaid beneficiaries in the service areas of the seven California RHCs (Table 11.4). On average, beneficiary utilization of services increased by 25 percent after the RHC was established in their area. Medicaid beneficiaries in these service areas had an average of 2.6 visits per person per year in 1991, which increased to 3.28 by 1994. Their level of utilization in 1994 is, in fact, close to the levels of utilization found in the National Health Interview Survey nationwide, where the average is 3.4 office visits with a physician per year and the average for low-income families is 3.3 visits per year. Increases in access to care were relatively uniform across provider-based and freestanding clinics and across clinics with small (fewer than 2.25 providers) and those with larger staffs.

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[4] "Clinic service areas were defined geographically by using the zip codes of Medicare and Medicaid recipients who used the clinic in 1994.

TABLE II.4

CALIFORNIA MEDICAID
AVERAGE NUMBER OF ENCOUNTERS PER MEDICAID RECIPIENT

	Average Number of Encounters Per Enrollee		Percent Change
	1991	1994	
Nationwide, All Low-Income Families	3.5	3.5	0%
Nationwide, All Rural Residents	3.2	3.2	0%
All California Clinics (n=7), Medicaid Enrollees	2.62	3.28	25%
All Freestanding Clinics (n=4), Medicaid Enrollees	2.68	3.39	26%
All Provider-Based Clinics (n=3), Medicaid Enrollees	2.53	3.12	23%
All Small Clinics (n=5), Medicaid Enrollees	2.54	3.23	27%
All Large Clinics (n=2), Medicaid Enrollees	2.84	3.47	22%

SOURCES: Nationwide estimates come from the National Center for Health Statistics, Results from the National Health Interview Survey (1992 and 1995). California Medicaid Statistical Information System files (1991 and 1994).

Gains in Texas Medicaid were evident, but more modest (Table 11.5). The average beneficiary increased his or her service utiition by about six percent in Texas after the RHC was certified. The largest increases came for clinics averaging more than 2.25 provider staff and for those that were freestanding. Most of the increases in Texas are attributable to three clinics, all of which had service-utilization increases closer to those of California; the remaining four clinics had only modest increases or even declines. ....

As with Medicaid beneficiaries in California and Texas, service utilization for Medicare enrollees increased after an RHC was established in their service area (Table 11.6). Average beneficiaries increased their physician visits by 12 percent; the gains were relatively constant across types of clinics, although clinics with large provider staff had the largest increases in service utilization. Clinics in California and Texas had comparable increases in utilization for their Medicare beneficiaries, suggesting that the increases were not necessarily related to changes at the state level.

Comparing these utilization figures to national statistics suggests that the changes in utilization were not the result of overutilization of services, since, in 1991, beneficiaries in these service areas received less health care than their counterparts nationwide. In fact, the average beneficiary went from being below the national average in the number of yearly physician visits received to being in the range of services normally received nationwide by seniors--from 5.23 to 5.86 visits per year.

b. Uninsured Patients

As mentioned in most other studies of the RHC program, we found that RHCs provided significant levels of care to uninsured, indigent patients in their service areas. Although it was not possible to measure service use by the uninsured, we asked clinics about their policies regarding uninsured patients. All of them accepted uninsured patients who could provide some copayment at

TABLE II.5

TEXAS MEDICAID
AVERAGE NUMBER OF ENCOUNTERS PER MEDICAID RECIPIENT

	Average Number of Encounters Per Enrollee		Percent Change
	1991	1994	
Nationwide, All Low-Income Families	3.5	3.5	0%
Nationwide, All Rural Residents	3.2	3.2	0%
All Texas Clinics (n=7), Medicaid Enrollees	2.09	2.22	6.2%
All Freestanding Clinics (n=3), Medicaid Enrollees	2.08	2.23	7.2%
All Provider-Based Clinics (n=4), Medicaid Enrollees	2.11	‘2.21	4.7%
All Small Clinics (n=5), Medicaid Enrollees	2.15	2.21	2.7%
All Large Clinics (n=2), Medicaid Enrollees	2.00	2.23	11.5%

SOURCES: Nationwide estimates come from the National Center for Health Statistics, Results from the National Health Interview Survey (1992 and 1995). Texas Medicaid Management Information System.

TABLE II.6

MEDICARE AVERAGE NUMBER OF ENCOUNTERS PER MEDICARE BENEFICIARY

	Average Number of Encounters per Enrollee		Percent Change
	1991	1994	
Nationwide, 65 Years and Older	5.6 to 5.4	5.7 to 6.5	
All Clinics (n=18)	5.23	5.86	12%
All California Clinics (n=7)	5.66	6.38	12.7%
All Texas Clinics (n=7)	4.51	4.97	10%
All Freestanding Clinics (n=9)	5.49	6.06	10%
All Provider-Based Clinics (n=9)	4.96	5.65	14%
All Small Clinics (n=14)	5.20	5.70	9.6%
All Large Clinics (n=4)	5.32	6.32	18.8%

SOURCES: Nationwide estimates come from the National Center for Health Statistics, Results from the National Health Interview Survey (1992 and 1995). Medicare SAF and Physician/Supplier files (199 1 and 1994).

the time they were seen, and all but one of the clinics accepted uninsured patients who could provide no payment for services when they were seen. Most clinics typically worked out a payment schedule for indigent patients, asking them to make small monthly payments toward their bill, and some had a reduced fee for them.

Most clinics indicated that they provided care free of charge to some patients they knew to be indigent. Charity care typically averaged about 5 percent of overall clinic revenues. Many clinics funded this out of their general operating revenues, although three (one in California and two in Texas) received funding from their district or county to treat indigent patients, and two California clinics noted that some state funds were available for indigent care. In addition, twelve of the eighteen clinics noted that some downcoding (i.e., charging for fewer or less intensive services than were actually performed) does happen for uninsured patients. Providers estimated that they downcoded anywhere from one patient a month to about half of all uninsured patients. Finally, while indigent care was common in the RHCs, none of the preexisting clinics indicated that they were treating more uninsured patients because of the RHC program.

2. Reasons for Increased Utilization

a. Acceptance of Medicaid Beneficiaries

The sizeable increases in utilization of clinic services by Medicaid and Medicare enrollees suggest that the presence of an RHC increases access to clinic services for rural residents, since they are using these services more often. An increased willingness among providers to take Medicaid patients appears the most likely reason for the increase in Medicaid access to care. In 1994, the lowest rate for a simple office visit was about $16 per visit in California and $11 in Texas. The RHC program increased Medicaid reimbursements substantially, and this made physicians more willing to treat Medicaid patients since they received adequate compensation for doing so.

Almost all the physicians we interviewed noted that there were some providers, either in their town or in towns nearby, that limited how many Medicaid patients they accepted for treatment. We found that, in general, the more providers a service area had that would not accept Medicaid. the more likely that area was to experience an increase in service utilization under the RHC program. The four study clinics noting that most of the providers in their service area did not accept Medicaid patients each showed large gains (between 20 and 44 percent) in service utilization among their Medicaid populations in the period after their RHC was established. While this finding conflicts with concerns expressed by the GAO (1996), the differences in our findings can be attributed to differences in measures. GAO measured the number of providers that were potentially available to Medicare and Medicaid enrollees, whereas we measured actual levels of utilization.

One such clinic is located in east Texas, about an hour from Austin. There were a number of physicians in this area, but few of them took Medicaid patients. The hospital began an RHC after conducting a survey that revealed these low levels of physician participation in the Medicaid program. By opening the clinic, the hospital also hopes to decrease Medicaid volume in its ER. It hired two midlevel practitioners to run the RHC, both of whom were new to the area. In the year after the clinic was established, utilization by Medicaid patients in the service area increased 20 percent. During this same period, ER utilization in the service area decreased about 11 percent.

b. New Provider Staff

We believe that a portion of the increase in access to care, particularly for Medicare beneficiaries, is attributable to the increased provider staff resulting from the RHCs. As noted earlier, 16 of our 18 study clinics added new provider staff to their communities. Seven of them added new physicians and 16 added new midlevei staff. These real additions of community providers make care more accessible to patients.

The effects of the increased provider staff show up most clearly in our claims data analysis of services received by Medicare patients. The average Medicare patient increased his or her service utilization by 10 percent during our study period. We asked the study clinics for their perceptions of access to care for Medicare beneficiaries; not a single clinic noted that it or any other provider in the area had ever limited the number of Medicare patients it accepted. All 18 clinics noted that care for Medicare patients had been limited only by the waiting time for an appointment or by physicians with full practices who were not accepting new patients. In other words, the gains to Medicare beneficiaries are not the result of increased acceptance of Medicare patients by local providers (since these providers were already taking Medicare patients), but, rather the result of the increased time available among area providers.

A large clinic located between Dallas and Austin showed considerable gains in its service area for Medicare beneficiaries. The clinic now has eight physicians for a rather large service area stretching over 50 miles and including just under 40,000 people (clinic providers are the only full-time physicians in the service area). The clinic estimates that about 40 percent of its patients are Medicare beneficiaries. This clinic has been in the area for decades, and its physician staff are well established. It used its increased revenues from the RHC program to add new provider staff, resulting in a net addition of two physicians and two midlevel practitioners to the clinic. Service utilization for Medicare beneficiaries in the service area increased by 24 percent during this period (from an average of 4.06 in 1991 to 5.01 visits in 1994). The increased utilization seems clearly attributable to an increase in provider staff, particularly since many of the older, more established physicians in the practice had full practices and were not accepting any new patients in 1991.

c. Service Area Factors

While increased utilization among Medicaid beneficiaries occurred for most of the study clinics, some of the most substantial gains came for RHCs with large service areas. As shown in Table 11.7, clinics with more than 10,000 Medicaid beneficiaries in their service areas increased their utilization at least three times as much as did those in smaller service areas. These results are especially relevant, given concerns that RHCs located in more highly-populated areas might provide a smaller increase in'access to care.

Based on our site visits, it appears that the clinics in more populated areas showed greater gains for Medicaid recipients because they were more likely to be located in communities where a number of providers did not previously accept Medicaid patients. For clinics in smaller communities, especially those with only one physician, accepting Medicaid patients was standard practice. These physicians have always taken Medicaid patients; therefore, the increased revenue provided by the RHC program has a smaller effect on thk willingness of the provider to accept Medicaid.

In the larger service areas, because several local physicians were not accepting Medicaid patients, the RHC program provides genuinely improved access to providers. In many of these areas, the study clinic was not the only RHC that opened in the area; other RHCs opened as well, and the gains in utilization were clearly due to the combined forces of all of the clinics in the service area.

Medicaid beneficiaries in the service area of a clinic in southern California increased their utilization by 44 percent during our study period (from an average of 2.67 to 3.86 visits between 199 1 and 1994). The RHC had a modest gain in provider staff during this period, moving from two to three providers on site. During this same time period, however, about six other clinics were established in this service area of approximately 60,000 people. In 199 1, few providers in this area

TABLE II.7

MEDICAID
AVERAGE NUMBER OF ENCOUNTERS PER MEDICAID RECIPIENT

	Average Number of Encounters per Recipient		Percent Change
	1991	1994	
Texas Clinics with Large Service Areas (n=4)	1.95	2.17	11%
Texas Clinics with Small Service Areas (n=3)	2.38	2.31	-2.9%
California Clinics with Large Service Areas (n=4)	2.70	3.48	28%
California Clinics with Small Service Areas (n=3)	2.25	2.43	8%

SOURCE: California Medicaid Statistical Information files and Texas Medicare Management Information System.

NOTE: In California, a large service area was defined as having more than 10,000 Medicaid beneficiaries. In Texas, large service areas had more than 5,000 Medicaid beneficiaries.

took Medicaid patients; in 1994, there appeared to be competition for Medicaid patients, according to clinic staff. As an example of this, clinic staff told us that one RHC in town was promoting itself to the Medicaid population by placing its flyers on the car windshields of another RHC's patients. Although the presence of multiple clinics in an area raises red flags among policymakers. in this case the apparent competition for patients clearly benefited the Medicaid population, as shown by their increase in service utilization.

3. **Emergency Room Utilization**

As further support of our findings that outpatient service utilization is increasing for Medicaid recipients in our clinic service areas, utilization of ER services decreased in the clinic service areas during the same period--in some cases, substantially (Table 11.8). In Texas, use of ER services decreased about 10 percent between 1991 and 1994; in California, the decrease was more than 30 percent. These decreases appeared relatively uniform across freestanding and provider-based clinics in the two study states.

Also consistent with our previous results, Medicare beneficiaries in all 18 of our clinic areas experienced no change in their level of ER use after the RHC clinic was certified in their area. This would be expected if Medicare beneficiaries faced fewer barriers in their access to medical care than did the Medicaid beneficiaries, as we found on site.

Surprisingly, Medicare ER visits ***increased*** in Texas during our study period. We collected no consistent data on site that would explain this result, although one clinic did note that its Medicare ER utilization had increased but that the clinic was unclear why. It may also be the case that beneficiaries in Texas were receiving a lower than normal number of ER visits in the pre-study period. In fact, the increase in the state still resulted in fewer ER visits per beneficiary in the post-study period than among the study beneficiaries in California, Maine, North Carolina, or Michigan.

TABLE II.8

EMERGENCY ROOM UTILIZATION
AVERAGE NUMBER OF VISITS PER ENROLLEE

	Average Number of Visits Per Enrollee		Percent Change
	1991	1994	
Texas Clinics, Medicaid	.59	.53	-10%
Texas Provider-Based Clinics, Medicaid	.57	.51	-10.5%
Texas Freestanding Clinics, Medicaid	.62	.58	-6.4%
California Clinics, Medicaid	.65	.45	-31%
California Provider-Based Clinics, Medicaid	.75	.52	-3 1%
California Freestanding Clinics, Medicaid	.58	.41	-29%
All Clinics, Medicare	.44	.44	0%
Texas Clinics, Medicare	.35	.41	17%
California Clinics, Medicare	.48	.45	-6%

SOURCE: California Medicaid Statistical Information System files (199 1 and 1994); Texas Medicaid Management Information System; Medicare SAF and Physician/Supplier files (1991 and 1994).

These results suggest that the Medicaid beneficiaries in our clinic service areas may have been substituting services provided in clinic offices for services previously provided in an ER. and our conversations with clinic staff suggest that this may be true. While staff had expected this to be the case, surprisingly few clinic staff or hospital administrators had noticed a reduction in their ER usage. This may be because hospitals view overall ER use and do not specifically tabulate changes among the Medicaid population.

A small clinic in southern California provides a good example. In 1991, there was one physician who had been in town for almost 30 years; this doctor had also been practicing with the same midlevel practitioner for the past 15 years. Both providers saw all the patients in town and had always accepted Medicaid patients. The hospital believed that this practice was overburdened and decided to open a small clinic next door to the hospital that would see patients on a walk-in basis. The physician continued to see any Medicaid patients who wanted an appointment, while the hospital RHC saw patients who wanted to be seen without an appointment. ER use during the study period decreased 23 percent in this service area.

A clinic about an hour north of Dallas, Texas, exemplifies the typical decreases in ER use. This two-physician practice (discussed earlier) believed that its reimbursements were too low under the Medicaid program and had stopped seeing Medicaid patients in the office in the time prior to its conversion to an RHC. During this period, physicians would see Medicaid patients with emergencies in the ER. After becoming an RHC, the clinic began accepting Medicaid patients again, and ER use in this service area dropped 22 percent.

C. Discussion

The 18 clinics in our study increased in the number of provider staff, as well as the level of services received by beneficiaries during the study period. Even though we found that a number of

new RHCs were conversions of existing physician practices (12 of 18), we found that these practices were clearly adding new staff and were expanding the level of services available in their areas. Thus, the program is increasing access to care--since these providers are not simply increasing their revenues without expanding the level of services they provide. The costs of this expansion are discussed in Chapter III.

In addition, we confirmed a finding from other reports--that many clinics are located in larger service areas which already have an established physician network in place. Despite the established network, these clinics used their RHC status to expand staff and improve the level of services available to beneficiaries. In fact, these clinics, which have caused the greatest concern among policymakers, demonstrate the greatest gains in service utilization for Medicaid recipients. It is also worth noting that the presence of more than one RHC in an area, another serious concern for policymakers, had no negative effect on improving access to care in the service areas. For example, the southern California county mentioned earlier for aggressive recruiting of Medicaid patients among clinics in its area actually had seven RHCs in 1994. Several other areas had between four and six clinics in 1994, and two areas had increased to eight clinics by 1997. Most of these areas showed large gains in utilization among Medicaid beneficiaries.

Because of the study's pm-post design we cannot definitively attribute to the RHC program the changes observed in this chapter. As noted earlier, information provided on site certainly support the conclusions drawn in this chapter. Several other factors support our conclusions here. First, the fact that we show similar results for Medicaid recipients in two different states, as well as for all Medicare beneficiaries, suggests that we are probably not observing effects that are related to a site or state-specific occurrence. Second, results from the National Health Interview Survey (NHIS) further suggest that we are not capturing a national trend in our results. According to NHIS survey results,

the average number of physician office visits per person per year in the United States was almost constant from 1991 to 1994 (changing from 3.5 to 3.4) (National Center for Health Statistics 1994), whereas our results show a clear increase in physician visits.

Another concern with our results could come from the fear expressed elsewhere that Rural Health Clinics are being established in areas that are not underserved. This concern could lead one to interpret our results as potentially indicating that the increase in beneficiary utilization might actually point to over-utilization of services. In other words, if the RHC status is being used simply to increase revenues for preexisting clinics, increased utilization could suggest that such increases were not warranted, that some services received were unnecessary. Here again, comparison with the NHIS data is helpful. We find that in the period before our clinics were established, beneficiary utilization of services was below the national averages for number of physician visits per year. In the post-study period, beneficiaries were receiving services at a rate highly similar to the national averages, suggesting that increases in utilization brought them to standard levels of health care.

HI. THE EFFECT OF RURAL HEALTH CLINICS ON MEDICAID AND MEDICARE COSTS

The large increase in the number of rural health clinics has heightened concern about the cost of the RHC program. Medicare payments to rural health clinics totaled nearly $125 million in fiscal year 1995, compared to $75 million in fiscal year 1992. For Medicaid, however, the expansion was more dramatic. Nationwide, Medicaid payments for rural health clinics tripled, from $104.6 million in fiscal year 1992 to $3 14 million in fiscal year 1995.'

The growth in rural clinic payments is due to a number of different factors, including:

- Increases in the amount paid for individual clinic services, due to the change from standard physician fee schedule reimbursement to cost reimbursement.
- Increases due to changes in the level of service clinics offer as they move toward a more expensive range of services.
- Increases due to increased utilization per enrollee because of improvements in access to care.
- Increases due to increasing numbers of enrollees in Medicare and Medicaid, which results in more enrollees receiving services

In this chapter we use the same pre-post methods from our access-to-care analysis to estimate the additional cost of a rural health clinic for the Medicaid and Medicare programs in 1994. Using this pre-post methodology, we calculate the additional per-clinic cost for (1) increased utilization due to improvements in access to care, (2) increased numbers of enrollees in the service area, and (3) increased payments due to the change in payment method. Details of this approach are found in Appendix A.

'Statement of George Grob, Testimony Before the Committee on Government Reform and Oversight, February 13, 1997.

In addition to concerns over increased program expenditures for rural health clinics. policymakers are concerned that the payment methodology for reimbursing hospital-based clinics. which allows unlimited reimbursement on per-encounter costs, may lead to unreasonable reimbursements for hospital-based clinics. In the Balanced Budget Act of 1997, Congress instituted a per-visit cap for hospital-based clinics in hospitals with 50 or more beds. To estimate the effectiveness of this cap on controlling program costs, we calculate the percentage difference between a hospital-based encounter under RHC payment and what would have been paid under fee-for-service methods, and compare this with the cost cap instituted under the new legislation.

The estimates found in this report could be overstated for two reasons. First, to calculate the increased RHC payment due to the change from fee schedule to cost reimbursement, we compare payments made to our rural health clinics in 1994 with those that would have been made if the services were rendered by physicians in private practice. It could be argued that for hospital-based clinics, this is the wrong comparison. Because many hospital outpatient services are partially cost-reimbursed, using the fee schedule may not produce a comparable measure of payment. However, the difficulties of trying to price hospital outpatient services under cost-reimbursement, combined with evidence from our case studies that services rendered in the hospital-based clinics were close to those rendered in a physician's clinic, led us to use the more conservative approach to estimating the government's costs. Second, we have not been able to estimate how the decreases in emergency room (ER) utilization, outlined in Chapter II, may have impacted program costs. Here again, this could make our estimate of program costs higher than it would be otherwise.

A. MEDICAID PROGRAM COSTS

1. California

Increases in payments to California study rural health'clinics were sizeable. but about two-thirds of the additional payments resulted from increased clinic volume. We estimate that the average amount of additional Medicaid payments to a rural health clinic in California was $129,364 in 1994 (Table 111.1). Of that amount, '47 percent ($60,121) was for increases in utilization due to improvements in utilization per beneficiary, 22 percent ($28,999) was due to the increase in the number of Medicaid recipients in clinic service areas, and 3 1 percent ($40,244) reflects the increased payment due to the change from fee schedule to cost reimbursement. Thus, on average, 69 percent of the additional outlays for a study rural health clinic in 1994 consisted of paying for the increased volume of services rendered under the rural health clinic program.

Hospital-based rural health clinics in California cost the California Medicaid program more than freestanding ones, but the larger payments were driven primarily by greater increases in utilization per beneficiary in the service areas of large hospital-based clinics. Whereas the average cost to the California Medicaid program for a hospital-based clinic was 38 percent more than it was for a freestanding clinic ($153,549 versus $111,263), the additional costs attributable to improvements in utilization per recipient were more than double those for the hospital-based clinics ($85,137 versus $41,395).

2. Texas

Additional payments to providers in the Texas study clinics were more moderate than in California, but a smaller amount was attributable to improved utilization per beneficiary. The average rural health clinic in our study cost the Texas Medicaid program an additional $56,460 in 1994--about half of the cost of the California clinics (Table 111.2) As we found in California, most

TABLE III. 1

ESTIMATED EFFECTS ON CALIFORNIA MEDICAID PAYMENTS
(Dollars)

	All Clinics	Freestanding	Hospital-Based
Estimated Average Cost Due to Change in Utilization Per Recipient	60,121	41,395	85,137
Estimated Average Cost Due to Change in Medicaid Enrollees	28,999	22,164	38,114
Estimated Average Cost Due to Change in Payment Methods	40,244	47,704	30,298
Total Additional Costs	129,364	111,263	153,549

SOURCE: California Procedure Formulary files and California Other Ambulatory State Medicaid Research Files.

TABLE III.2

ESTIMATED EFFECTS ON TEXAS MEDICAID PAYMENTS
(Dollars) ,

	All Clinics	Freestanding	Hospital-Based
Estimated Average Cost Due to Change in Utilization for Recipient	7,386	1,216	13,558
Estimated Average Cost Due to Change in Medicaid Enrollees	26,222	6,730	45,713
Estimated Average Cost Due to Change in Payment Methods	22,852	4,159	41,544
Total Additional Costs	56,460,	12.105	100,815

SOURCE: Texas Procedure Formulary file and Texas Medicaid Information System Files.

NOTE: One hospital-based study clinic failed to provide cost data.

of the increase in payments (60 percent) was due to increases in volume of care. In Texas, however. the largest proportion of the payment increase was due to increases in the number of Medicaid enrollees in the clinics' service areas. Forty-six percent of the increase in payments was due to rising numbers of Medicaid enrollees, while only thirteen percent of the additional payments reflect improvements due to increased utilization per recipient. Forty percent of the additional Medicaid payments was due to the change in reimbursement methods from the Texas physician., payment schedule to cost reimbursement.*

Hospital-based clinics cost the Texas Medicaid program eight times more, on average. than free-standing ones. This difference reflects the very small size of some of the freestanding Texas clinics in our study as well as the difference in pricing methods between hospital-based and freestanding clinics. Small clinics cost the government less since they see few Medicaid patients and hence bill for fewer encounters. The average freestanding clinic cost the Medicaid program only $12,105 in 1994, while the hospital-based clinics cost just over $100,000.

C. MEDICARE PROGRAM COSTS

The Medicare program's additional payments to the average rural health clinic in our study totaled $37,141, less than the costs to the two state Medicaid programs (Table 111.3). In contrast to the two Medicaid programs, most of the increase in Medicare payments (66 percent) was due to the change from payment under the Medicare physician payment schedule to cost reimbursement. This difference in the costs for the Medicare versus the Medicaid program reflects the smaller gains in access to care made under the Medicare program (noted in Chapter II). Because more Medicare

[2]Hospital-based clinics in Texas did not receive 100 percent of costs in 1994. All payments made on the cost-to-charge ratio to Texas hospitals were multiplied by a factor of .946. This difference is reflected in our estimates.

TABLE III.3

ESTIMATED EFFECTS ON MEDICARE PAYMENTS
(Dollars)

	All Clinics	Freestanding	Hospital-Based
Estimated Average Cost Due to Change in Access	4,044	651	7,928
Estimated Average Cost Due to Change in Medicaid Enrollees	8,746	1,345	17,240
Estimated Average Cost Due to Change in Payment Methods	24,351	5,873	45,139
Total Additional Costs	37,141	7,869	70,307

SOURCE: Medicare Annual Physician Fee Schedule Transition Payment Amount, Physician/Supplier files and Outpatient Service Files.

NOTE: One study site did not serve Medicare beneficiaries; it served only pediatrics patients. This clinic is not included in the above data; if it were, average Medicare impacts would be *lower*.

beneficiaries were already receiving a higher level of service, the change in payment system cost the Medicare program relatively more, since it paid higher rates for patients already being serviced by the system.

The freestanding clinics cost the Medicare program much less than the hospital-based ones. The total increase in costs at a freestanding clinic was only $7,869 compared with $70,307 for hospital-based clinics. Again, this was due in part to the difference in increases in the volume of care--hospital-based clinics improved access to care more than did the freestanding clinics, on average, and were located in areas with larger increases in the number of Medicare beneficiaries. However, the average additional payment due to the change from fee schedule to cost reimbursement was much lower among the freestanding clinics, reflecting the smaller size of the freestanding clinics and differences in payment methodologies.

The lower cost among the freestanding clinics in the Medicare program also reflects the fact that four of the freestanding clinics were actually being paid less under cost reimbursement tiian they would have been paid under Medicare's physician fee schedule. That is, four clinics were losing Medicare revenue by being a rural health clinic. Two of these clinics were paid slightly less under cost reimbursement; they could actually be considered "breaking even" on cost-reimbursed services, but two clinics were paid substantially less under cost reimbursement ($16,000 or more). One of these clinics was aware of this discrepancy and anticipated either adding more staff or changing the clinic's status in the next year. The other clinic, which offered a relatively sophisticated set of services to its patients compared with most of the study clinics, was a practice that had chosen to convert to RHC status because of its state's low Medicaid reimbursement rates. Apparently, staff did not analyze how the conversion would affect their Medicare payments. Because freestanding clinics are all capped at the same per-visit rate. regardless of the level of sophistication of services

offered, more technologically advanced rural health clinics may earn more revenue under fee schedule rates. In this case, the clinic included X-rays as part of a standard office visit, which drove its rates above the cost cap.

D. Differences in Hospital-Based Reimbursements

We have already seen that hospital-based RHCs received higher payments on average; however, the average hospital-based clinic provided a higher volume of services to Medicaid and Medicare patients than did the average free-standing clinic. To investigate whether the reimbursement system is more costly for hospital-based providers, we measured the cost per encounter at freestanding and hospital-based clinics, then calculated the percentage markup of this encounter price over what would have been paid under fee-for-service. By calculating the payment on a per-encounter basis. we eliminated the differences between the clinics due to the larger volume of care rendered by hospital-based clinics.

The average percentage markup per encounter for hospital-based clinics was much higher than it was for freestanding clinics.' Under the California Medicaid program, the average freestanding rural health clinic was paid 41 percent more per encounter under cost reimbursement, while the average hospital-based clinic was paid 2 15 percent more (Table 111.4). It is important to point out, however, that this very high markup among hospital-based clinics is due in part to a very small hospital-based clinic with exorbitant costs--exactly the situation that concerns policymakers.

The hospital-based clinics in California illustrate the problems of the present reimbursement system. On one hand, one very low volume. hospital-based clinic had a markup of more than 600 percent. This clinic explained to us that its charges during our study year were unusually large for

'Note that by measuring the markups on a per-encounter basis, we measure only cost changes due to the change in reimbursement methods.

TABLE III.4

PERCENTAGE MARKUPS PAID OVER PHYSICIAN FEE SCHEDULE PAYMENT
(Percent)

	Weighted Equally by Clinic	Weighted by Number of Encounters Rendered
California Medicaid Hospital-Based Clinics	215	15
California Medicaid Freestanding Clinics	41	36
Texas Medicaid Hospital-Based Clinics	95	97
Texas Medicaid Freestanding Clinics	35	35
Medicare Hospital-Based Clinics	187	115
Medicare Freestanding Clinics	19	32

SOURCE: California and Texas Procedure Formulary files; Medicare Annual Physician Transitional Payment File; California Other Ambulatory Service files, Texas MMIS tiles, and Medicare Physician/Supplier and Outpatient service files.

a number of reasons. Nevertheless, both the Medicare and the Medicaid program paid an encounter rate that many would consider out of line (more than $200 per encounter). In contrast, another large hospital-based clinic in California had a markup of only one percent over the fee-for-service rate. Indeed, because of that clinic, if one were to weight clinics in proportion to the number of encounters they provide (instead of weighting each clinic equally), the markup for hospital-based clinics would be only 15 percent overall. Our study clinics illustrate that cost reimbursement can result in some facilities receiving extremely large payments and attracting public discontent with the program; yet, at the same time, the majority of the services rendered under the program were being paid at a much more reasonable rate.

In addition, hospital-based RHCs have higher markups under the Texas Medicaid and Medicare programs. In the Texas Medicaid program, freestanding clinics were paid 35 percent more over what they would have been paid under the physician payment schedule; hospital-based clinics were paid 95 percent more. In the Medicare program, hospital-based clinics were paid 115 percent more per encounter than they would have under fee-for-service, while freestanding clinics were paid 32 percent more.

E. WILL THE NEW HOSPITAL COST CAP CHANGE THE DISPARITY?

In the recently passed Balanced Budget Act of 1997, Congress mandated a cost cap for all hospital-based RHCs located in a facility with 50 or more beds. To determine how effective the cost cap would be in controlling costs, we calculated the percentage markups for the Medicare program, assuming that hospital-based clinics with 50 or more beds were constrained to the $54.39 cost cap in effect in 1994 (the year of our data).

Our study included five hospital-based clinics that were in hospitals with.50 or more beds. Of those five, only two would have been affected by the cost cap; the other three were already being

reimbursed below the cap. As a result, the difference in payment levels for these hospital-based clinics would change very little. Under the Medicare program, hospital-based clinics would still be reimbursed 104 percent more, on average, than they would under traditional physician fee schedule amounts. Hence, even after the new legislation is imposed, the percentage markups for hospital-based clinics will still be higher than for freestanding clinics, and the possibility for very high reimbursement rates remains. In addition, all the hospid-based clinics in hospitals with fewer than fifty beds were over the cost cap.

F. ARE THE COSTS REASONABLE?

The concern raised by these results is whether the additional payments were reasonable given the additional services rendered by our study RHCs. That is, do the benefits of increased access to care in the RHC program justify the additional cost to Medicare and Medicaid? While a full cost-benefit analysis of the program is beyond the scope of this report, some perspective on clinic payments levels will help determine whether the costs for the program are exorbitant.

One key benefit from the program is the additional providers that have located in these areas as a result of the clinic. Using national data on practitioner salaries and practice costs, we estimated that the salary and practice costs for the additional practitioners hired in California would be approximately $286,255 per clinic per year. while those hired in Texas would cost $43 1,442. Given that the average clinic in California has a patient mix of 57 percent Medicare and Medicaid patients, while in Texas the average clinic serves 49 percent Medicaid and Medicare patients, we adjusted these estimates to reflect that the government pays only the portion of the provider costs for services rendered by the Medicare and Medicaid programs. Thus, for the additional providers in the service areas, we would expect the government to pay $! 63,165 in California and $2 11,406 in Texas. These numbers are comparable to our estimates of clinic costs. In California, we find that the government

is paying an additional $147.449 to the study RHCs ($129.364 from the Medicaid program and $18.085 from the Medicare program), while in Texas the government pays an additional $125.802 ($56,460 from the Medicaid program and $69.342 from the Medicare program.) Hence. overall. the program's cost are not out of line compared to the costs of the additional staff now practicing in these areas.

G. Discussion

The Rural Health Clinics program is adding substantial costs to the Medicare and Medicaid systems, but these costs are not unreasonable for the number of providers now practicing in the clinic's service areas. In the California and Texas Medicaid programs most of the increased cost is due to the increase in the volume of services rendered. Improvements in access to care, combined with increased enrollments in the Medicaid programs in the clinic service areas, account for most of the additional costs. In contrast, the majority of the additional costs paid by the Medicare program are due to payment for services under cost reimbursement instead of under the physician payment schedule. This is primarily because Medicare beneficiaries had better access to care,than Medicaid beneficiaries before the clinic was opened.

The method for calculating hospital-based clinics' costs results in higher percentage markups per encounter for hospital-based clinics than for free-standing clinics. Because hospital-based clinics are not subject to any cost caps, some hospital-based clinic rates are well above what many would consider reasonable costs; however, this is by no means the majority of the providers. Instituting the freestanding clinic cost cap for hospital-based providers with 50 or more beds, however, does not markedly affect the average markup rate. This is due to the fact that, in our study sites, the hospitals with fewer than 50 beds were much more likely to be paid rates that exceeded the cost caps than those with 50 or more beds.

IV. THE STATE VIEW

Much of the recent scrutiny of the Rural Health Clinic program has been attributed to states' dissatisfaction with the cost of the program. Although rural health clinic policy is set at the federal level as part of Medicare and Medicaid legislation, states pay for their portion of the Medicaid funds that go to rural health clinics. Hence, states bear some financial responsibility for the program. Understanding how the states perceive the program--particularly how the Medicaid program views it--is important to fully assess the costs and benefits of the program. In our interviews with Medicaid and state officials, we found that many states are not overly concerned about the program.

A. SUPPORT FOR THE RURAL HEALTH CLINIC PROGRAM

We found a range of views on the rural health clinics program--but the majority of the states in our study support the program. Four states--North Carolina, Michigan, Kansas and Texas--provide tangible support for rural health clinics. Although California does not provide tangible support, its highest health officials speak favorably of the program. Only in Maine is there active resistance to the growth of clinics.

The states that support rural health clinics do so in various ways. In North Carolina, the Office of Rural Health helps providers set up clinics and provides technical assistance to the clinics on an ongoing basis, playing a role similar to that of consultants in other states. In Michigan, the Department of Public Health advocates for the development of rural health clinics and conducts workshops for providers interested in becoming clinics, while the state's Medicaid office provides technical support to clinics to help them complete cost reports and billing requirements. In Kansas, the state has developed its own criteria for health professional shortage areas, classifying 90 of the state's 105 counties as governor-designated shortage areas, thus qualifying them as rural health clinic

sites. The Texas state legislature has funded the Center for Rural Health Initiatives for the express purpose of advocating for rural health issues in general--of which, rural health clinics are a part. The Center has written a guidebook for clinic conversion and is in the process of conducting a study on the impact of rural health clinics on access to care. California, which has more rural clinics than any state except for Texas, does not actively support rural health clinics, but it does assist areas in obtaining federal shortage area designations so that rural health clinics can open.

A main reason why policymakers in these states support the rural health clinic program is that, in general, they believe that the clinics at least help maintain access to health care. Medicaid officials in California and North Carolina think that the program is maintaining doctors in rural areas who might otherwise be enticed into suburban practice (especially in California, where they have seen increased demand for general practitioners by health maintenance organizations). Officials in Kansas, Michigan, and Texas argued that, in addition to maintaining access to physician services, the Rural Health Clinics program was bringing more midlevel practitioners into rural practice. The sparsely populated areas of western Kansas, western Texas, and Michigan's Upper Peninsula are areas where few physicians want to establish practices, and midlevel providers can be a viable alternative under the auspices of a rural health clinic. These states expressed concern that some rural health clinics are not increasing access to care--that independent physicians are converting their offices to clinics without increasing staff. Overall, the assessment is that to some degree, the clinics are improving access to care.

Although the states have not conducted formal studies to support their perceptions of the clinics' impact, the state-level statistics they cited support this perception. In the states where physician participation rates in the Medicaid program are known, physician participation has increased along with an increase in the number of rural health clinics, In all the states studied, the number of nurse

practitioners and physician assistants has increased. State officials cannot attribute these changes solely to the growing number of rural health clinics, but the data are consistent with their belief that the clinics are improving access to care.

B. RHCs AND COST CONTAINMENT POLICIES

A key concern raised about the Rural Health Clinic program is that clinics are paid on the basis of their costs, which gives providers no incentive to strive for efficiency and which can lead to large costs for the Medicaid program. State Medicaid offices, however, have not focused on the RHC program as an area for cost containment because these clinics are not a big budget item for a state. As Table IV. 1 shows, payments to rural health clinics constitute no more than 1.1 percent of a state's Medicaid budget. As a respondent in California noted, payments to rural health clinics are less than the "rounding error" in California's $17 billion Medicaid budget. If states are to find ways to contain Medicaid costs, rural health clinics will not give them much "bang" for their efforts.

Some states are unconcerned about containing rural health clinic costs because they believe that clinics cost only slightly more than the states' physician reimbursement method. In Michigan and North Carolina, fee-for-service Medicaid rates are relatively high according to state officials. In these states, where reimbursement for a physician visit is around $40, the additional amount paid under cost reimbursement to a freestanding clinic is limited to approximately $16 per visit (the difference between the Medicaid fee-for-service amount and the cost-cap on the independent rural health clinic fee). Indeed, in North Carolina some rural health clinics are considering ending their cost-reimbursed status, believing that clinics could make more money under the physician's fee-for-service payment system. In these states, there is less to be gained by focusing on rural health clinic costs.

TABLE IV. 1

STATE EXPENDITURES ON RURAL HEALTH CLINICS

	Amount Spent on Rural Health Clinics	Total Medicaid Budget	Percentage of Budget Spent on Rural Health Clinics
California (1995)	$225,33 1,354	$20 billion	1.1
Maine (1996)	$2.4 million	$965 million	.003
Kansas (FY 1996)	$4,143,681	$783 million	.005
Michigan (1995)	7,040,361 [b]	$5.4 billion	.003
Texas (1994)	$2,508,028	$6.5 billion	.0004
North Carolina"	$5 million	$4 billion	.001

NOTE: All data is provided by program staff.

"North Carolina doesn't have figures available. These are ballpark estimates by staff.

[b]Independent clinics only.

The final reason that Medicaid programs are not focusing on rural health clinics for cost containment is they are focusing their efforts on developing Medicaid managed care programs. Most of the states we studied are actively designing managed care programs for their Medicaid recipients; they believe that managed care will help solve a plethora of problems in the state health care system. Thus, the states do not want to devote resources to focusing on rural health clinics when pressing work remains to be done on issues judged more important to the states.

C. Chancing the Hospital Reimbursement Method

Despite general acceptance of the RHC program, state officials cited the unlimited Cost reimbursement allowed under the program for hospital-based clinics as a factor that needs to be changed.' In North Carolina, the Office of Rural Health has steered its providers away from establishing provider-based clinics because of the potential for abuse; the state did not want to help establish clinics that could prove to be an embarrassment. At the time of our site visits neither Michigan nor Kansas had had the opportunity to settle cost reports with provider-based clinics. Respondents in Michigan, however, noted that the wide range in reimbursement per visit among hospital-based providers ($50 to $200 per visit) has led state officials to recognize the potential for abuse; as a result, Michigan is contemplating different reimbursement strategies for hospital-based rural health clinics. In Texas, in response to a cost-containment mandate by the state legislature, hospital-based clinics are reimbursed for approximately 77 percent (instead of 100 percent) of their costs. State officials noted that, while this approach does not address the potential for abuse, it does decrease payments made to hospital-based clinics.

'The unlimited cost reimbursement for hospital-based clinics was changed under the Balanced Budget Act of 1997. All provider-based clinics are subject to the same cost-cap as the independent clinics, unless the clinic is a rural hospital-based one with fewer than 50 beds.

We should note that most state officials believed that there is very little fraud in the Rural Health Clinic program. However, the states have neither the staff nor the data systems to support extensive monitoring of payments to clinics. Without the ability to monitor clinics closely, state officials feel the ***potential*** for abuse is great enough that something needs to be done to head off the problem before it starts.

D. MAINE'S OPPOSITION TO RURAL HEALTH CLINICS

Unlike our other study sites, Maine has a very different perception of the rural health clinics. The state is actively fighting some Health Professional Shortage Area Designations in an effort to thwart the growth of clinics. In addition, the state is concerned about cost reimbursed providers--both rural health clinics and Federally Qualified Health Clinics--and feels that it is very important to move these providers away from cost reimbursement and thus promote the efficient delivery of health care.

Maine's vastly different viewpoint probably is due to the state's different set of circumstances. A recent report by the Maine Medical Assistance Foundation has shown that Maine has no critical health care shortage areas (Keller et al. 1993). The Medicaid office generally agrees with this study; however, it cites the existence of some areas in the state that cannot support health care providers without financial help (such as island communities); otherwise, the state's health care needs are pretty much being met. As a result, there is no reason to offer higher reimbursement to health care practitioners to practice in rural areas. In addition, the physician participation rate in the Maine Medicaid program is virtually 100 percent; hence, from the viewpoint of the Medicaid program, the Rural Health Clinics program offers little, if any, ability to improve access to care. Indeed, the Medicaid program views the clinics as a conversion of physician offices that have been very stable--that the only reason for making the conversion was to increase reimbursements.

At the same time, Maine faces severe budget problems, a factor that has a strong impact on the Medicaid program. Maine ranks 45th in the nation in Medicaid payment rates. and recently the state legislature repealed a small increase in physician payments. Many officials believe that all doctors in the state are woefully underpaid. As a result, Medicaid officials believe it unfair to pay physicians in cost-reimbursed practices such as FQHCs and RHCs at higher rates than other physicians who choose to operate an independent office.

In addition, some officials in the Medicaid program believe that the Rural Health Clinics program is wasting money maintaining a hospital system that cannot be supported. Although there is only one provider-based rural health clinic, many of the free-standing clinics are associated with a hospital.' At present, there are 41 hospitals in the state, and some Medicaid officials believe that the state will ultimately be unable to support this many. The result is a fierce struggle among Maine's hospitals to survive, and they are using the reimbursement from the rural health clinics to shore up their reserves. In the view of these 'Maine officials, this is a poor use of Medicaid resources.

It should be noted that some officials in Maine were a bit more supportive of the program concept. All respondents noted that the number of midlevel providers in the state has increased dramatically, and many argue that the rural health clinics program was a significant component in promoting the use of these providers. Officials also noted that the state's shortage problems have lessened significantly in recent years, during the same period in which a number of clinics opened and contributed to the improvement. Nevertheless, the overall assessment of the program is that it unfairly allows changes in the reimbursement system.

'Until recently, Maine had a Health Financing Review Board which controlled hospital reimbursement. As a result, provider-based clinics were not economically advantageous.

E. DISCUSSION

The states' views of the Rural Health Clinic program reflect a decades-old problem in national rural health care policy: How does one design a federal policy that is applicable to the entire country when the problems faced in rural areas differ widely? Here we find that some states are 'actively helping their health care providers convert to rural health clinic status, while another state is actively fighting conversion. The reason for this diverse reaction is simple: some states view their geographic health professional shortage problems as critical and are willing to spend resources in order to help eliminate them. Other states view the geographic maidistribution as a less critical issue and want to spend resources in alternative ways. By having one program applied nationwide, states which have the problems the program is designed to address are relatively content, while those with other more pressing problems feel they are being forced to "waste" resources. Eliminating the program. however, will disrupt the situations where the program is working effectively to the benefit of the areas where it does not work well. Hence. no easy solution exists.

V. THE FUTURE OF RURAL HEALTH CLINICS UNDER MEDICAID MANAGED CARE

The treatment of rural health clinics under government managed care programs is an important issue for the future of rural health policy. Many state policymakers are focusing on managed care as the dominant delivery system for Medicaid recipients. The phasing out of the federal mandate for Medicaid cost-based reimbursement by the year 2003 under the Balanced Budget Act of 1997 (BBA), combined with the fact that cost-based reimbursement may no longer be guaranteed for Rural Health Clinics (RHCs) even in the short run, under state Medicaid managed care, means that policy issues regarding RHC status could become irrelevant for the Medicaid program. Furthermore, because Medicaid comprises 25 percent of the average clinic's patients in our study, curtailing RHC Medicaid reimbursement could have a significant impact on clinic finances.

During our interviews with state Medicaid and Rural Health officials, we discussed how Medicaid managed care might affect the RHC program. We also asked clinics about their experiences with managed care. Before reporting the results of those conversations, we should note here that all the state officials pointed out that Medicaid managed care is still evolving, with some details of urban plans yet to be worked out. As a result, less attention has been paid to its implementation in rural areas, and there could be significant changes in the approaches described below as plans are finally implemented in rural areas.

A. Limited Involvement with Medicaid Managed Care

Most of the clinics in our study have had patients who participated in commercial managed care plans, but these clinics did not appear unduly burdened, either financially or administratively, by participation in these programs. Of the eight clinics with significant commercial managed care

populations (comprising 10 to 20 percent of their patient base), five noted that their reimbursements often had worked out better under the managed care contract. In these cases, the HMO reimbursements were set based on urban payment rates. The RHCs found these rates higher than the rates they typically charged for a visit. Three clinics believed that reimbursement was lower under managed care.

Few of the clinics had any experience with Medicaid managed care, although most believe that it will be coming to their area soon. Of the 18 study clinics, only 4 had Medicaid managed care contracts. Two clinics were participating in Primary Care Case Management (PCCM) programs, receiving a monthly fee in return for serving as the designated primary care physician for Medicaid recipients; the other two were part of a Medicaid managed care program that changed their Medicaid payment structure more extensively. Several clinics noted that a state Medicaid managed care program was due to start in their county within the next year or two. In some cases, these counties had been scheduled to begin the program much earlier, but the start date was postponed. Clearly anxious about how Medicaid managed care would affect them, many of these clinics had stories about other RHCs whose reimbursement had been negatively affected by Medicaid managed care.

The two clinics with Medicaid PCCM contracts were having difficulties with the programs. This was especially true in Michigan, where many of the study clinics' regular Medicaid patients were assigned to- providers in other towns. In other states, some non-PCCM study clinics got Medicaid patients from other counties that had a PCCM program. Because these patients were assigned to providers in other counties, however, the clinics could not be reimbursed by Medicaid for these patients, and they found it difficult to refer them to designated primary care providers rather than treat them in the RHC.

Of the two study clinics we interviewed that were participating in a Medicaid managed care program other than PCCM, one clinic felt that its experience was too limited for it to make an assessment of the program's impacts--although the clinic thought that clinic payment rates are reasonable. This clinic noted that many of its Medicaid patients had been assigned to other providers and that there had been a transition process during which these patients tried to make the clinic's physicians their primary provider. The other clinic--located in eastern Texas, near Austin--reported financial difficulties under the state's 1915(b) waiver program. Medicaid managed care began in this clinic's county in 1995, and the clinic had experienced significant drops in revenue under the program, for which the clinic apparently was not cost-reimbursed. All Medicaid visits under this program have an $8 cap (as opposed to the clinic's cost-reimbursed rate of $35), which caused the clinic to lose between $2,000 and $20,000 per month. The clinic also stated that it was having diffkulty getting its chums processed (the waiting time was almost two months) and that about one-quarter of its claims had been denied. This clinic was located in one of only three counties in Texas that were participating in the Medicaid managed care demonstration.

We found that, in recent years, several of the clinics we selected in southern California have converted to Federally Qualified Health Clinic (FQHC) status, to gain better protection from Medicaid managed care. FQHCs also receive cost-based reimbursement for Medicaid. Federal 1915(b) waivers, which have been required for states wishing to implement certain Medicaid managed care programs, mandate the continuation of cost-based reimbursement for FQHCs, but not for RHCs. The California clinics have not actually participated in a Medicaid managed care program although, in anticipation cf how the program might be implemented in their county, they have made the switch.

B. Limited Protection for Cost-Based Providers

Although most study states have no Medicaid managed care in rural areas. programs for rural areas are under development; five of the six study'states have detailed plans for implementing managed care in rural areas in the near future. In these plans, the special reimbursement status of clinics would be eliminated or, at best, minimally protected. Most of these changes were scheduled to occur more rapidly than the federally planned phase out of mandated Medicaid cost-based reimbursement for RHCs, planned to happen gradually between 1997 and 2003.

In three of the five states introducing managed care, at least two policymakers believe that. under their managed care plan, market forces will keep clinics necessary f access to care financially strong; on the other hand, the market will not reward redundant clinics. As a result, policymakers in these states want to rely on market forces as much as possible, with limited interference by the state. In their managed care plans, they generally oppose special protection for RHCs, despite the fact that many believe RHCs provide good care and improve access under the present reimbursement system.

Maine's managed care plan provides the lowest level of protection for RHCs. The state currently operates a voluntary managed care plan under a 1915(b) waiver and hones to make the plan mandatory in the future. Under this plan, RHCs are left to negotiate with managed care organizations (MCOs) in the same way as any other provider (although, for the near future, FQHCs are guaranteed cost-based reimbursement). State officials we interviewed last year emphasized their hope of eliminating all cost-based reimbursement in the future, but they gave FQHCs a short window of opportunity to reorganize their practices so as to become more efficient and to compete with other providers. Because Medicaid officials view the RHCs as a less critical component of the Medicaid delivery system (or, as some suggest, less powerful politically), RHCs have not been given the same

window of opportunity. Indeed, Maine Medicaid officials are counting on the managed care program to eliminate the perceived oversupply of RHCs.

California, Michigan, and Texas take a less drastic approach, although Texas officials do not anticipate that managed care will be in rural areas for awhile and have not studied the issues fully. In all three states, rural health clinics, just as they do in Maine, will have to gain contractswith state-contracted MCOs. In these three states, however, some protections--while minimal--are available to RHCs. In California, the program is set up so that any willing provider can contract with the MCO, but safety net providers must do so on the same basis as everyone else. RHCs choosing this option could continue with cost-based reimbursement for six months, after which they would revert to the same rates as other providers (for FQHCs. the cost-based reimbursement was to be maintained indefinitely, although changes under the BBA now mean that mandated cost reimbursement for FQHCs will be phased out as well). MCOs are required to include at least one safety net provider in their network. In Michigan. although RHCs and managed care networks are free to negotiate payment as they wish, the state is likely to give preference in the bidding process to networks that include RHCs. Michigan also is encouraging providers in sparsely settled areas, such as the Upper Peninsula. to form their own network. Likewise, Texas intends to allow RHCs to negotiate their own reimbursement on a competitive basis. but it will award points to the managed care networks in the bidding process for including RHCs. The state also requires that, to qualify as providers, networks must have a significant percentage of providers in a local area. In all these states, MCOs with RHCs as part of their network may be given preference in the bidding process, but the MCOs will not necessarily continue to reimburse RHCs at cost.

Kansas seems to offer the greatest protection to RHCs, although protection varies across the state. Under its 191 S(b) program. RHCs may choose (1) to be a PCCM provider and receive cost-

reimbursement, (2) contract with a managed care network for a negotiated rate. or (3) not participate in a managed care plan at all. Under this program, RHCs can continue to receive cost reimbursement for Medicaid clients (under the constraints now imposed by the BBA), although they run the risk of losing their patient base if they choose not to participate and a large proportion of their patients opt for managed care plans.

C. States' Views on Medicaid Managed Care in Rural Areas Not Yet Tested

In sum, policymakers and clinics alike believe that Medicaid managed care is on the near horizon for RHCs. Many policymakers are confident that critical providers will have the power to negotiate adequate reimbursement rates; hence, they believe that many RHCs will receive favorable contracts under the new system. In contrast, most clinics fear Medicaid managed care, given the importance of Medicaid as a payment source for the clinics and their limited experience with managed care. Nevertheless. none of the proposed managed care plans have been tested in rural areas; until plans are implemented. it will be difficult to know how, or whether, clinics will survive. The new Medicaid managed care provisions implemented under the Balanced Budget Act of 1997 appear to provide some federal protection to RHCs under managed care in the short run. Under the BBA, states are required to provide a supplemental payment to RHCs that contract with HMOs. However, over the long term. mandated Medicaid cost based reimbursement will be phased out altogether. These new provisions will certainly influence how state managed care plans develop and may also impact on the survival of rural health clinics under these plans.

VI. DISCUSSION

The Rural Health Clinics program has effectively achieved its goal. The program is increasing access to care among Medicare and Medicaid beneficiaries at a substantial. but not unreasonable, cost; yet it has attracted much criticism. While most health care providers are grappling with decreasing federal reimbursement rates and increasing pressure to improve efficiency, this program carves out a subset of providers and allows them to be paid under cost reimbursement--a payment method that enhances federal reimbursement rates while allowing for some inefficient provision of services. It is not surprising that policymakers--especially those who are trying to control costs or who represent areas that cannot qualify for the special status--have carefully scrutinized the program. As with all programs, problems exist. But. the benefits should not be overlooked.

A. CLINICS ADDED PROVIDER STAFF

One clear effect of the RHC program is that it has increased the number of midlevel practitioners working in rural areas. Sixteen of our 18 study clinics showed a net gain in the number of midlevel practitioners. The financial benefits of rural health clinic status, combined with its requirement that ail clinics employ a midlevel practitioner, has induced rural physicians, many of whom were not previously iriterested in supervising midlevel staff, to incorporate midlevel practitioners into their practices. This process was not always easy--the turnover of midlevel staff in the clinics suggests that this was a difficult transition. We do not know whether physicians would retain these midlevel practitioners if they no longer saw an advantage to having the RHC status.

It is worth noting that the RHC program also brought new physicians to rural areas. Seven of the study clinics had a net gain in the number of physicians in their area. Most of the newly added physicians were in the larger clinics and in towns that already had several providers in place.

However, many of these established physicians had full practices. and the additional staff helped improve access to services in these areas.

B. Clinics Expanded Access to Carf.

Almost all of the study clinics improved access to care for Medicare and Medicaid enrollees, with enrollees receiving a higher level of services after an RHC was established in their area. The largest gains were among Medicaid patients in California clinics, although Medicare, and Texas Medicaid patients also showed increases in the amount of health care received.

The biggest improvements in access for Medicaid patients were made in the larger rural markets. The reason for this is straightforward: RHC status makes it financially attractive to serve Medicaid patients. In more populated rural areas, physicians have the opportunity to select whom they serve, and low Medicaid payment rates have led many physicians to limit the number of Medicaid patients they serve. When those low rates are replaced by cost reimbursement, physicians are willing to treat Medicaid patients; and in some areas they actually compete for these patients. In the smaller market areas, particularly those with only one provider, Medicaid patients appear to have had less of a problem obtaining health care, since the town provider typically takes all patients regardless of ability to pay.

Although clinics in smaller areas typically made smaller gains in increasing utilization of services for enrollees in their service areas, these providers were also less financially stable than their counterparts in more populated areas. Of the eight clinics that supported the only physician in their community, seven existed prior to receiving RHC status, and all had been struggling financially. The increased reimbursement under the RHC program helped stabilize these providers and keep

them financially viable. In other words. the RHC program appears to have improved access to care in smaller market areas by helping clinics retain current provider staff.

C. CLINIC PAYMENTS SUBSTANTIALLY HIGHER UNDER RURAL HEALTH CLINIC PROGRAM

Rural Health Clinics are paid substantially more than what they would be paid under physician fee schedules. Payments per encounter to freestanding clinics were about 20 percent higher under the RHC program, and hospital-based clinic payments were almost double what they would be under fee-for-service payment. These higher payment rates, combined with increasing Medicaid and Medicare enrollment and improvements in access to care, have resulted in substantial increases in federal payments to the clinics.

For the Medicaid program, most of the cost increase is due to higher levels of service utilization among recipients. About two-thirds of the increased Medicaid payments. for both hospital-based and freestanding clinics, is attributable to gains in clinic volume.

For the Medicare program, the majority of the increase in payment level is due to the higher cost the government is paying per service rendered--i.e., the change from physician fee schedules to cost reimbursement. In large part, this has occurred because the Medicare population in our clinic service areas were already receiving a relatively high level of services prior to the establishment of the RHC; therefore, utilization increased less.

While the cost of the RHC program is substantial, it may not be inappropriate given the number of new providers in the clinic service areas as a result of the program. Comparing the average practice expense of the additional providers with the average cost to the government of the program, the figures are roughly comparable in California and would actual reflect a bargain in Texas. The

RHC program is, in essence, paying the cost for Medicare and Medicaid enrollees to increase the availability of health care provider staff in these service areas.

D. Is the RHC Program the Appropriate Policy Approach?

The final question is whether the strategy of providing cost-based reimbursement to providers in underserved rural areas is the appropriate policy approach to improving access to health care. Many state officials believe what this study confirms--rural health clinics do improve access to care. But is this the most appropriate way to achieve that goal?

One issue raised in several states concerns whether it is equitable that enrollees in underserved areas be given a benefit that is not necessarily available to those in other areas. As officials in both California and Maine pointed out, this program works because it increases Medicaid reimbursement to providers. However, if Medicaid reimbursement levels are so low as to cause providers to avoid Medicaid recipients, why should payment levels be increased only in those areas that can prove they have a shortage of health care providers? The implicit assumption in this policy is that Medicaid recipients in non health professional shortage areas can access health care services; an assumption that some Medicaid officials doubt. In fact, the Physician Payment Review Commission (1991, 1994) reports that most studies show that increased Medicaid fees improve access to care for recipients. This suggests that the more relevant policy issue is whether Medicaid payment rates are too low to provide adequate access to care for all Medicaid recipients.

Another issue for consideration is whether the RHC program is the most appropriate policy for sustaining small rural hospitals. The RHC program is helping improve the financial status of small rural hospitals. In recent legislation, which exempted the smallest rural hospitals from the cost cap, is an explicit decision to retain special status for these facilities. Other federal programs, like the Critical Access Hospital legislation just passed as part of the Balanced Budget Act of 1997, are

explicitly designed to help small hospitals while forcing them to make hard decisions to limit costs. Critical Access Hospitals, for example, will have restrictions on the number of beds they have and on their distance from other health facilities. The RHC program, by allowing small rural facilities to avoid making these decisions by keeping unlimited cost reimbursement. may be working at cross purposes to these other federal programs.

One goal of the RHC program is to increase the number of providers available in rural areas. However, other federal programs, like the National Health Service Corps, have similar policy goals. An examination of the effectiveness of a!! these programs might help the federal government decide which of these programs is most successful. given their relative costs, or target the programs to the areas where they will be most effective. Although the cost of the RHC program is reasonable, if the program overlaps with other federal programs. the cost may not be deemed reasonable.

The maldistribution of health care providers has long been a problem in the United States. The problem has persisted despite policymakers' repeated attempts to solve it. The Rural Health Clinics program has demonstrated that it can effectively increase providers in underserved areas. This success should not be overlooked when changes are made to solve the program's problems.

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APPENDIX A:

STUDY DESIGN AND METHODOLOGY

STUDY DESIGN AND METHODOLOGY

The Health Care Financing Administration contracted with Mathematica Policy Research. Inc. (MPR) to conduct a study that would examine the effects of the Rural Health Clinic (RHC) program on access to care for Medicare and Medicaid enrollees. HCFA also wanted an evaluation of the costs associated with the RHC program. In order to accomplish these goals, we selected 18 Rural Health Clinics across 6 states. For each site we conducted an on-site evaluation of the clinic in addition to an analysis of Medicare and Medicaid claims data for the enrollees in the clinic's service areas. This appendix reviews our study methodology.

A. SELECTING STUDY STATES

We chose states that would be representative of nationwide and regional experiences with the RHC program but would also allow us to study areas of particular concern to the federal government. Federal concerns over the rapid growth of RHCs in certain states, combined with a need to chose study sites with enough newly opened RHCs during our study period to allow us to select a set number of clinics, led us to choose states with large numbers and rapid growth of RHCs

The two states with the largest number of RHCs, Texas and California, were chosen as the primary study states. We chose the remaining states to gain geographic representation in each of three geographic regions, the Northeast, Midwest, and South. These states had the largest number of clinics for their region and had not already been included in other recent studies of the RHC program by the Health and Human Services's Office of the Inspector General and the General Accounting Office. These were Maine, Michigan. Kansas, and North Carolina, respectively. Kansas was primarily chosen because it was among the top five states in terms of its overall number of

RHCs and because its large number of frontier areas would facilitate studying an isolated RI-K. Table A. 1 shows the clinic growth in our six study states between 199 1 and 1996.

We had several additional concerns in selecting study states. First. we were interested in obtaining data on midlevel practitioners so that we could analyze changes in midlevel supply associated with the opening of a RHC. North Carolina had computerized, historical data on the number and practice location of midlevel practitioners in the state. None of the other states we contacted had this data. A second issue was the extent of the state Medicaid managed care activities that were beginning to go into operation during our study period. Extensive Medicaid managed care programs in rural areas during our study period would compromise our data analysis, yet we also wanted to learn how Medicaid managed care was affecting RHCs. None of the selected study states had Medicaid managed care programs that were prevalent in rural areas during the study period. Several, however, had programs they were implementing in the time immediately following our study period. thus allowing us to assess how these programs might impinge on the operation of RHCs.

B. SELECTING STUDY CLINICS

We used the On-Line Survey Certification and Reporting System.(OSCAR) maintained by HCFA's Division of System and Management and Data Analysis to randomly select clinics within four distinct study categories: provider-based versus freestanding, large (more than 2.25) versus small provider staffs, and location in a frontier area or area of persistent poverty. (These categories are explained below.) Fourteen of the clinics were located in the two study states where we would also have Medicaid data available: California and Texas. One clinic from each of the remaining states was selected. Tables A.2 and A.3 outline the distribution of study sites across the states and study categories.

TABLE A.1

CLINIC GROWTH IN STUDY STATES

State	Number of Active RHCs on 12/31/91	Number of New Clinics In Study Period (1992-1993)	Number of Active RHCs, 1/1/94	Number of Active Clinics 1/1/96
California	42	40	82	152
Texas	30	154	185	393
Kansas	34	43	78	133
North Carolina	47	21	68	111
Michigan	5	33	38	90
Maine	3	4	7	29

SOURCE: On-Line Survey Certification and Reporting System (OSCAR).

TABLE A.2

DISTRIBUTION OF STUDY SITES

State	Large	Small	Provider-Based	Freestanding	Frontier	Persistent Poverty	Total
California	2	5	3	4			7
Texas	2	5	4	3	1		7
Kansas		1	1		1		1
Michigan		1	1				1
Maine		1		1			1
North Carolina		1		1		1	1
Total	**4**	**14**	**9**	**9**	**2**	1	**18**

TABLE A.3

DISTRIBUTION OF PROVIDER-BASED AND FREESTANDING CLINICS

State	Provider-Based	Freestanding
California	1 large clinic 2 small clinics	1 large clinic 3 small clinics
Texas	1 large clinic 3 small clinics	1 large clinic 2 small clinics (1 frontier)
Kansas	1 small clinic (frontier)	
Michigan		1 small clinic
Maine		1 small clinic
North Carolina	1 small clinic (poverty location)	
Total	**9** clinics	9 clinics

While the designation of provider-based versus freestanding clinics is straightforward. our other three study categories required some analysis to determine the most appropriate method for classifying clinics. To select the four clinics with large provider staffs. we used the On-Line Survey Certification and Reporting System (OSCAR) to determine the median and 75th percentile number of provider staff (both physicians and midlevel practitioners) for all RHCs. We classified large clinics as those with a number of staff equal to or greater than the 75th percentile of the range for all RHCs, which was 2.25 provider staff. To identify our two clinics in isolated areas, we randomly selected clinics in Kansas and Texas that were located in counties with a population density of fewer than six people per square mile. Finally, to include a clinic that would reflect the conditions of impoverished areas, we randomly selected a clinic in North Carolina that was located in an area designated as "persistently impoverished" as defined by the Department of Agriculture in the Area Resource File.

Within each study design category (for example. small provider-based clinic in Texas), we randomly selected one clinic and four back-up clinics for our study. Three of our first selections were disregarded; two because they bordered on other states. which would complicate the Medicaid data analysis and one because it was on an island off the coast of Los Angeles. Project staff began by contacting the chosen study clinic and. if refused, contacted the next clinic on the list. In general, clinics were receptive to our requests to conduct an on-site evaluation. We contacted 22 clinics to obtain our 18 study sites.

C. PROCESS ANALYSIS

The process analysis component of our study consisted of on-site interviews with each of the study clinics and a visit to each state capital to interview state officials. Interviews were conducted using semi-structured protocols so that topic areas covered were consistent and responses could be

aggregated easily across sites. Clinic-level interviews were conducted under an understanding of confidentiality.

1. Clinic Site Visits

We spent one day on site at each of the 18 study clinics. A typical day consisted of seven interviews: clinic manager, clinic business manager, clinic physician, clinic midlevel practitioner, local hospital administrator, local (non-clinic) physician or midlevel practitioner, and local WIC or Public Health provider. Clinic protocols covered access to health care for local Medicare and Medicaid enrollees and the uninsured, Including questions about provider staff recruitment and retention, number of Medicare and Medicaid patients seen, the willingness of other local providers to treat Medicaid patients, and how these patterns had changed over time. We also asked questions regarding clinic operations, clinic services provided, clinic finances, service coordination. and the presence of managed care in the area.

We used several methods to verify what we were told by clinic staff. Interviewing other local physicians and midlevel practitioners who did not work for the clinic allowed us to gain a broader perspective on the issues facing providers and patients in these communities. Interviews with local WIC and Public Health staff were particularly useful in identifying barriers to access for the poor and uninsured. In addition, we asked the same questions of several different respondents (triangulation), allowing us to verify answers and develop a full picture of the issues at each clinic.

2. **State-Level Visits**

For each of the six study states. we met with state Rural Health and Medicaid officials to gain their perspective on the RHC program. We typically met with two or three different Medicaid branches, attempting to interview officials with knowledge about policy issues, fiscal issues, and

provider issues. We met with staff from the Office of Rural Health in the five states that had one. In Texas, we met with the Center for Rural Health Initiatives, which is funded by the Texas state legislature. In most states we also conducted telephone interviews with the state nurse practitioner and state physician assistant associations, as well as other representatives identified as knowledgeable respondents.

Our discussions with state officials typically covered five broad topic areas. We asked about (1) perceived reasons for RHC growth in the state, (2) issues related to medical payment (in part to facilitate our cost analysis), (3) information regarding changes in access to care caused by the RHC program, (4) other state programs designed to improve access in rural areas, and (5) state Medicaid managed care programs and other policies that might have an impact on the future of the RHC program.

D. Data Analysis

Creating measures of access to care is difficult without having detailed data about the health care needs of a population. To combat this problem. we created several measures that would allow us to approximate access issues in a pre and post period. In particular, we used national-level data on physicians and state-level data on midlevel practitioners to calculate provider supply before and after a clinic was certified. We also used Medicare and Medicaid claims data to investigate how service use changed for enrollees in the clinic service areas. To conduct the pre-post analyses, we selected study clinics certified in 1992 or 1993, which allowed us to use data from 1991 to study the pre-clinic period and data from 1994 to study the post-clinic period.

The second component of our study examines the costs associated with these changes in access. For this, data on the number of encounters in a clinic service area (from the access to care analysis)

is combined with price and cost information to determine clinic level estimates RHC program costs to state and federal budgets.

1. Provider Supply Analysis

We used the Health Resources and Services Administration's Area Resource File (ARF) to determine the number of allopathic physicians in 1990 and 1994, and the number of osteopathic physicians in 1989 and 1995. These number were matched with ARF population estimates, for 1990 and 1994, to determine the supply of physicians in the clinics' counties, in our study states, in counties with a Health Professional Shortage Areas, and in rural counties nationally. Because the ARF contains data at the county level, we were not able to conduct this analysis for the clinics' true service areas, which often were less than county-wide. In addition, data was not available to match the exact years of our study period (1991 and 1994).

We were interested in calculating the same provider to population ratios for the midlevel practitioners in our study sites. but comprehensive data for all of the study states did not exist. Most states do not keep historical data on their midlevel practitioners. We were able to collect such data for North Carolina, however.

The North Carolina Health Professions Data System files, maintained by the Sheps Center for Health Services Research at the University of North Carolina, contained electronic, historic data on physician assistants and nurse practitioners for 1990 and 1994 along with their practice location. This file did not contain data on Certified Nurse Midwives (CNM), but we were able to obtain that information from the North Carolina Board of Nursing in hard copy. We aggregated the CNM data with the data in the Health Professions Data Systems tiles and matched it all to the county level

population estimates available through ARF. This allowed us to calculate midlevel to population ratios for counties in North Carolina that had a RHC open during our study period.

2. **Claims Data Analysis**

The pre-post analysis of changes in access and costs required individual level claims and enrollment data for Medicare and Medicaid enrollees, and the analyses are conducted separately for enrollees in each program. Because Medicare claims data is uniform for all beneficiaries, we were able to use Medicare data for all eighteen study clinics. However, because of the difficulties inherent in working with state Medicaid data, we limited its USC to only two study states, Texas and California. We selected a disproportionate number of clinics from California and Texas to include more clinics in the Medicaid portion of the analysis. All Medicare and California Medicaid files were obtained from the HCFA's Bureau of Data and Management Systems (BDMS). Texas Medicaid files were obtained directly from the state.

To identify services received by enrollees, we began by using the Medicare Standard Analytic Files, Physician and Supplier claims for 1991 and 1994. This information was matched with the Medicare Denominator files for the same years. which contained beneficiary information and allowed us to connect claims with beneficiaries that resided in the clinics' service areas. A similar process was used for California and Texas Medicaid.

In California, we were able to use an enhanced version of the state Medicaid Statistical Information System (MSIS) files, known as the State Medicaid Research Files (SMRF) to obtain 1991 claims data. California claims data for 1994 came from the standard state MSIS files, since the enhanced files were not yet available for the year. Person-Summary-Files allowed us to select enrollees in clinic service areas. In Texas, state MMIS files were used for both study years, and the eligibility history file was used determine beneficiary residence.

Three steps were necessary to create analysis files from the claims data. First. we needed to determine the set of services to be included in the analysis. Second, we needed to define the clinic service areas. Finally, we needed to construct individual level analysis files that measured encounters for enrollees.

a. Defining Services Offered

We began by defining the scope of services for which we would conduct our analysis. The study looks at services received by enrollees in the pre and post period (including those received from other providers in the service area), but we needed to ensure that we were only analyzing service use that could conceivably occur at the study clinic. In other words, we would not want to analyze whether a beneficiary received more X-rays once the RHC was established if the RHC did not provide that service to its patients. In addition, because freestanding clinics were only billing for a RHC encounter in 1994, whereas they billed each individual service provided in 1991, we needed clinic services offered to determine what comprised a typical RHC encounter.

We asked each of the eighteen study clinics to complete a three-page form indicating services offered in their clinic (see Exhibit A. 1). We developed this list by selecting every service from the 1997 Physician's Current Procedural Terminology (CPT) book and the 1997 book of Medicare Level II codes (HCPCs) that a RHC might reasonably offer to its patients. This method allowed us to match services offered by the clinics to billing information on the claims. We also matched services to the HCFX revenue codes, so that claims with only revenue codes would also be included in the study. Once clinics identified which services they offered, we created a data file of services that was unique for each of the eighteen study clinics. We used this set of services to extract the appropriate claims data for the analysis.

EXHIBIT A.1

CPT CODES COMMON TO CLINICS, DRAFT CHECKLIST

	CPT Codes			
Procedure	From:	To:	Revenue Codes	National HCPC Codes
Evaluation and Management				
Office and Other Outpatient Setting	9920 1	99215	510.521	
Brief Office Visit for Psychiatric Prescription				M005 - MOOS MOO64
Hospital Inpatient Services	9922 1	99238	I	
Emergency Department Services	9928 1	99288	450,459	
Nursing Facility Services	99301	99333		
Home Services	99341	99353	522	
Case Management/Care Plan Services	99361	99373		
Preventive Medicine Services	99381	99397		
Counseling/Risk Factor Reduction Services	9940 1	99429		
Newborn Care	9943 1	99440		
Hearing Screening				V5008
Surgery			490,499	
I&D, Debridement, Biopsy, Removal, Etc.--Simple, Superficial	10040	11313		
Excision of L ons	11400	11646		
Debridement, Avulsion, Excision of Nails	11700	11765		
Cutting/Removal of Corns, Calluses, Nails (Excludes Debridement)				M0101
Injection of Lesion	11900	11977		
Repair/Closure of Superficial Wounds	12001	12057		
Repair/Closure of Complex Wounds	13100	13300		
Bums, Local Treatment	16000	16042		
Destruction of Lesions	17000	17286		
Cryotherapy for Acne	17340	17360		

EXHIBIT A. 1 *(continued)*

	CPT Codes			
Procedure	From:	To:	Revenue Codes	National HCPC Codes
Puncture Aspiration of Breast Cyst	19000	19001		
Needle Breast Biopsy	19100			
Incision of Abscess	20000	20005		
Injection of Trigger Points	20500			
Joint Arthrocentesis, Aspiration, Injection	20600	20610		
I&D Abscess of Neck/Thorax	21501			
Closed Treatment of Rib Fracture	21800			
Biopsy/Excision of Back	21920	21930		
Treatment of Clavicular Fracture/Shoulder Dislocations	23500	23680		
Treatment of Humeral Fractures	24500	24685		
Treatment of Forearm/Wrist Fractures	25500	25695		
Treatment of Hand/Wrist Fractures	26600	26785		
Treatment of Leg and Ankle Fractures	27750	27848		
Removal of Foreign Body from Foot	28190	28193		
Treatment of Foot Fractures	28400	28675		
Application of Splints/Arm and Finger	29105	29131		
Application of Strapping/Upper Body and Extremities	29200	29280		
Lower Extremity Casts	29305	29450		
Application of Leg Splints	29505	29515		
Strapping/Leg and Foot	29520	29590		
Removal of Cast Applied by Other Physician	29700	29750		
Removal of Foreign Body in Nose	30300			
Cauterization of Mucosa/Control of Nasal Hemorrhage	30801	30920		
Venipuncture	26400	36425		G0001
Procto- and Sigmoidoscopy	45300	45385		

EXHIBIT A. 1 *(continued)*

Procedure	CPT Codes From:	CPT Codes To:	Revenue Codes	National HCPC Codes
Diaphragm/Cervical Cap Fitting	57170			
Colposcopy	57452	57460		
Cervical Biopsy/Cauterization	57500	57513		
Insertion/Removal of IUD	58300	58301		
Maternity and Delivery Care	59000	59899		
Removal of Ocular Foreign Body	65205	65265		
Drainage of Eyelid Abscess	67700			
Ear Piercing	69090			
Removal of Foreign Body from External Ear	69200	68210		
Radiology				
Diagnostic Radiology	70010	76499	610, 611, 612, 320, 321, 322, 324, 350, 351, 352, 359; 400, 401, 403, 404	
Diagnostic Ultrasound	76506	76999	402	
Pathology/Laboratory				
Multichannel Lab Tests (Profiles)	80002	80092	300	G0058 - G0060
Urinalysis	81000	81015	307	
Urine Pregnancy Test	81025		925	
Chemistry	82000	83887	301	
Hematology and Coagulation	85002	85999	305	G0116
Immunology (Allergen Specific)	86000	86005	302	
Tuberculosis, Intradermal, and Tine Test	86580	86585		
Microbiology (Including Urine and Throat Cultures)	87001	87999	306	
Blood Cholesterol Test (Home Unit Type)				G0054
Glucose Test (Home Unit Type)				G0055

EXHIBIT A. 1 *(continued)*

	CPT Codes			
Procedure	From:	To:	Revenue Codes	National HCPC Codes
Wet Mounts				G0111
KOH Preps				G0112
Pinworm Exams				GO113
Medicine				
Immunizations/Injections	90700	90749	770, 771, 779	G008 -G010
Influenza to Medicare Beneficiaries				Q0034
Audiologic Function Testing				
Screening Audiometry	92551	92557	471	
Cardiovascular				
Electrocardiogram	93000	93042	730, 731, 739	
Pulmonary				
Spirometry	94010			
Vital Capacity	94150	94240		
Inhalation Treatments	94640	94652		
Allergy Testing				
Allergy Testing	95004	95078	924	
Allergen Immunotherapy	95115	95199		
Osteopathic Manipulative Treatment (OMT)				
All OMT Procedures	98925	98929		
Special Services and Reports				
Specimen Handling and Transfer	99000	99001		
Services After Hours/At Other Location/Emergency	99050	99058		
Supplies and Materials	99070			
Educational Supplies	99071			
Physician Education to Groups	99078			
Special Reports (Insurance Forms)	99080			

EXHIBIT A. 1 *(continued)*

	CPT Codes			
Procedure	From:	To:	Revenue Codes	National HCPC Codes
Unusual Travel	99082			
Other Services				
Ipecac or Similar Administration for Emesis	99175			
Administration and Interpretation of Developmental Tests	99178			
Therapeutic Phlebotomy	99195			

b. Defining Service Areas

Defining clinic service areas was key to our analysis since we needed to accurately capture enrollees who might reasonably use the clinic but didnot want to include those for whom the clinic was inaccessible. We aggregated the zip codes for each enrollee that used the RHC at least once in 1994, and created a measure of the percent of enrollees that used the clinic by zip code. We defined the clinic service areas as encompassing any zip code that captured at least five percent of clinic users in 1994.

c. Building Analysis Files

For each enrollee in the clinic service areas, we created one record containing demographic and enrollment data and an expenditure and utilization summary. Analysis tiles were created for all enrollees, not just clinic users, to ensure that we captured any spillover effects from the creation of the clinic (see Exhibit A.1). These person-level summary files included all primary health care services normally provided by the RHC as well as emergency room visits. Files included physician and midlevel visits rendered in either a clinic. home or skilled nursing facility.' All institutional and nonprofessional services were excluded from the files. Finally, once analysis files were constructed, we identified all dually eligible patients, those covered by both Medicare and Medicaid.

The final component of the analysis files was to construct data elements that were comparable. across years. A complication of the RHC program is that freestanding clinics are reimbursed at a set amount per visit for any services rendered as part of an encounter with a physician or midlevel. Services that do no include an encounter (i.e. laboratory) are not reimbursed separately but are considered part the overall payment per visit. As a result, freestanding clinics do not bill for

'None of our study clinics billed for inpatient services through the rural health clinic.

individual services but rather submit claims for a standard visit. To compare this with data for the non-RHCs (both in the pre period and for non-RHC providers in the service area in 1994) which submit claims for all services rendered, we needed to create a unit of analysis that was comparable across years and provider types. This was not an issue with provider-based clinics. since they continue to bill each individual service and are reimbursed according to their overall cost-to-charge ratio for ambulatory services.

To create comparable files, we used the 1991 claims, and the 1994 claims for services not billed as RHC visits, to construct "encounter" files. Encounters were defined the same as a RHC visit would be: all services rendered on the same day by the same provider that include a professional component were considered an encounter. Encounters included only those services that involved a face-to-face contact with a physician or midlevel practitioner.

3. Access Study

To measure access to care, we compared the number of encounters received per enrollee in the pre and post period for services rendered by the rural health clinic. As described earlier, all claims that were not billed as RHC visits were aggregated into encounters comprised of services rendered by the same provider on the same day (in order to replicate the typical billing practice of an RHC). The number of encounters per enrollee were totaled in the pre and post period, and the final changes in service utilization were calculated by measuring the changes in the total number of encounters per enrollee.

To determine the effects various clinic characteristics had on changes in access. we also calculated changes in the number of encounters per enrollee by certain clinic features, including for freestanding and provider based clinics, clinics with small and large provider staff. and those located in frontier areas. It should be noted. however. that our sample size was probably too small to

desegregate into such study groups in any meaningful way. We only had four clinics with large provider staffs, for example, and only two clinics were located in frontier areas.

4. Cost Analysis

a. Estimation Issues

To understand the effects of Rural Health clinics on Medicare and Medicaid costs. it is important to measure the increase in cost, as well as to understand the factors that led to the increase. To illustrate these problems, we express the cost to the government of health care services as:

$$(1)\ \textit{Cost to Medicaid/Medicare} = \sum_{t} \textit{Payment for Service } t \times \textit{Utilization per Enrollee of } t \times \textit{Number of Enrollees}$$

The increasing cost to Medicaid/Medicare for rural health care services could be the result of:

- Increases ***in Payment Per Service.*** One component of this increase is the change in reimbursement resulting from rural health clinic status.
- ***Changes in Service Types Toward More-Expensive Services.*** Either the practice of medicine or patient needs may change. During the study period, for example, many surgical services were moved to outpatient locations.
- ***Increases in the Number of Services Per Beneficiary or Recipient.*** Patients may be using the health care system more or less. which hinges largely (but not exclusively) on access to care.
- ***Changes in the Number of Beneficiaries or Recipients.*** Part of this change is due to improved access to care, but most is due to other factors. In particular, Medicaid expansions to pregnant women and children occurred during this period.

Ideally, we would like to estimate the effect of the clinics on all four components of change. However, we face the following data problems:

- Clinics' payments for *freestanding* providers are based on an all-inclusive visit rate. so that bill-record data do not indicate the types of services provided to patients. A "visit" to a clinic may include an electrocardiogram, but we would not know it.

- Clinics are allowed to charge for a visit of care only if it includes interaction with a health care professional. Thus, a visit for a lab service is not reimbursed by the Medicare program, and clinics vary as to whether these encounters are documented. . . .

- More than one clinic may open in the same service area during the period. These clinics may offer different services, making it impossible to identify the services rendered to the community.

- Dually eligible Medicare beneficiaries may have two different payment sources--Medicare for the visit, and Medicaid to cover the copayment in some cases. Medicaid rules on how much of a copayment is allowed will vary by state.

- Identifying the number of new enrollees resulting from clinic availability would require a survey of area residents--which is beyond the scope of this study.

- Identifying where. in the clinic's absence. the beneficiary or recipient would have received services (and whether Medicaid would have had to pay for transportation), as well as what the payment rate would have been. would require a community survey. The proportion of patients who would have sought care from a hospital emergency room or urban physician versus the proportion who would have seen a private physician may significantly affect cost impacts.

- Insufficient time has elapsed to measure cost reductions that may be associated with improved health following increased access to care.

These data problems make it difficult to identify clearly the costs of a rural health clinic. However, we can estimate the effects on Medicare for freestanding clinics as the difference between the product of visits and price in 1994 and 1991. Mathematically, this can be expressed as:

$$(2)\quad \sum_{v} Price_{v}^{1994} \times Quantity_{v}^{1994} - \sum_{t} Price_{t}^{1991} \times Quantity_{t}^{1991},$$

where

$Price_{v}^{1994}$	is the Medicare price of a *visit* to that rural health clinic in 1994[2]
$Quantity_{v}^{1994}$	is the quantity of *visits* rendered by that clinic in 1994
$Price_{t}^{1991}$	is the price of a particular *service* (CPT-4 code service) in 1990
$Price_{t}^{1991}$	is the quantity of each *service* rendered in 1990.

The overall changes in total costs between 1991 and 1994 can be due to two types of price changes:

1. Changes in prices resulting from inflation
2. Changes in prices resulting from the switch from fee-for-service to cost-reimbursed clinic visits

The overall changes in total costs can also be due to changes in the number of visits resulting from either:

1. Changes in quantity of visits resulting from changes in access for existing users
2. Changes in the quantity of visits resulting from changes in the number of users

We are interested in separately identifying two of these components--the changes in prices resulting from the switch from fee-for-service to cost-reimbursed visits, and the changes in quantity

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[2]The Medicare price is 80 percent of the full price, as beneficiaries are responsible for a copayment of 20 percent. up to the cost cap.

of visit resulting from changes in access for existing users. These two components are the effect of the clinic programs. The two other changes make it very difficult to disentangle these differences.

A further complication is that. although we had visit information for 1994. we had disaggregated service use data for 1991. Therefore. to estimate the changes from 1991 to 1994. we had to create "visits" (or encounters) for 1991 that were equivalent to the 1994 data. To do so. we built an "encounter" file from the 1991 data (as described above). An encounter was defined as one would define a clinic visit--all services rendered on the same day by the same provider that included a professional component were considered an encounter. (That is. only encounters that included a face-to-face contact with a physician or a midlevel practitioner were included.)

A final complication is that patients in a clinic's service area are likely to receive outpatient services from other health care providers, both before and after the clinic is established. Thus, the post-period includes a combination of visits rendered by the clinic *and* by other community providers. Hence, we need to adjust our estimates according to the market share of the clinic.

b. Estimation of Costs Due to Change in Payment Methods

To estimate the impact of changes in payment methods to the Medicare or Medicaid program. assuming access to care does not change. we calculated:

$$(3) \quad \sum_{E} Price_{v}^{1994} \times Quantity_{E}^{1991} - \sum_{t} Price_{t}^{1990} \times Quantity_{t}^{1991}.$$

This equation uses the number of encounters estimated from the 1991 data (which is the same as a "visit") valued at 1994 prices. The number of encounters ($Quantity_{E}^{1991}$) represents the exact same volume as the number of fee-for-service services provided in 1991 ($Quantity_{t}^{1991}$), and the

difference between the two price/quantity terms is the cost to the Medicare/Medicaid system resulting from changes in price. assuming everyone in the service area uses the clinic.' We then adjust this estimate by multiplying it by the clinic's market share of all encounters in the service area, For the Medicare program. the results were multiplied by .8 to reflect that the Medicare beneficiary pays a 20 percent copayment.

An important issue is whether we can desegregate this price change into changes resulting from inflation and changes resulting from the switch to cost-based reimbursement. Suppose. for example, that we substitute our estimates of the price and quantity of encounters in 199 1 for the price and quantity of individual services provided in the pre-clinic period:

$$(4) \quad \sum_{E} Price_{E}^{1991} \times Quantity_{E}^{1991} = \sum_{t} Price_{t}^{1991} \times Quantity_{t}^{1991}.$$

Then, we can rewrite our estimate of the cost to Medicare/Medicaid, assuming no change in access (equation 3) as:

$$(5) \quad \sum_{E} Price_{v}^{1994} \times Quantity_{E}^{1991} \quad \sum_{E} Price_{E}^{1991} \times Quantity_{E}^{1991}.$$

Rearranging, this equation, we get:

'Note that under rural health clinic status. a clinic may not be reimbursed for an encounter that does not include a professional component. For example. if a patient comes in only for a laboratory test and does not see a health care professional. the visit is not reimbursable as a separate visit. However. the costs of such senices are reimbursable as part of the overall per-visit rate.

$$(6) \quad \sum_E Quantity_E^{1991} \left(Price_v^{1994} - Price_E^{1991}\right).$$

which can be expressed as:

$$(7) \quad \sum_E Quantity_E^{1990} \left[\left(Price_v^{1994} - Price_v^{1991}\right) + \left(Price_v^{1991} - Price_E^{1991}\right)\right].$$

This equation shows the components of the price change--the first component in brackets. $Price_v^{1994} - Price_v^{1991}$, is the change in the price resulting from inflation. whereas the second component. $Price_v^{1991} - Pricey'$, is the change resulting from the change from encounters under cost-based reimbursement to visits.

Two problems occur in estimating this result. The first is that due to coding changes that occurred between 199 l and 1994. we are unable to obtain pricing information for some services rendered in 1991. In addition. identifying the appropriate inflation rate can be debatable, as many states did not increase physician payments to keep pace with inflation.

However. if we assume the same inflation factor would have applied to both types of payment. we can substitute a deflated 1994 price for 199 1 prices. That is, if:

$$(8) \quad Price_{,.}^{1991} = \frac{Price_v^{1994}}{Price_v^{1994} - Price_v^{1991}} ; Price_E^{1991} = \frac{Price_E^{1994}}{Price_v^{1994} - Price_v^{1991}}$$

We can substitute the values in (8) into equation (7) and the inflation factors cancel out. This leaves us estimating:

$$(9) \quad Quantity^{1991}\left(Price_{v}^{1994} - Price_{E}^{1994}\right).$$

This is the basic equation for calculating the estimates of the change in costs due to the change in price.

A further complication, however, is that for freestanding clinics and hospital-based clinics in California's Medicaid program, the price of an encounter includes all costs rendered for encounters as well as all costs of nonencounters--those services that do not include a face-to-face contact with a designated provider, but which could have been billed by a provider other than a rural clinic. Mathematically. this can be expressed as:

$$(10) \quad Price_{E}^{1994} = \left(\frac{Cost\ of\ Encounter^{1994} + Cost\ of\ Nonencounter^{1994}}{Number\ of\ Encounters^{1994}}\right).$$

In order to account for the additional costs that are included in the encounter rate, we have to include the costs of the nonencounters when calculating the services rendered at the fee-for-. service rate. Hence, our cost estimation is:

$$(11) \quad \overset{(a)}{(Quantity^{1991} \times Price_{v}^{1994})} + \overset{(b)}{(Quantity\ of\ Nonencounteres^{1991} \times Price_{v}^{1994})} - \overset{(c)}{(Quantity^{1991}\ Price^{1994})}$$

where:

(a) is the number of encounters from 199 l multiplied by the prices from the 1994 fee schedule;

(b) is the number of nonencounters from 1991 multiplied by the prices from the 1994 fee schedule; and

(c) is the number of encounters from 199 1 multiplied by the clinic's all-inclusive rate. obtained from its cost report.

Hospital-based clinics under Medicare and Texas Medicaid do not bill for all-inclusive rates. Hence, we do not need to make adjustments for nonencounters. Instead there are other difficulties. Hospital-based rural health clinics continue to bill the programs as they would without clinic status. When cost reports are settled, and final payment determination is made, a cost-to-charge ratio is calculated for all Part B services rendered by the hospital and the hospital s reimbursement is adjusted using this global ratio--no settlement is made for individual Part B services. (California and Texas Medicaid follow this same approach.) However. the hospitals do calculate a clinic-specific cost-to-charge ratio, even if it is not used for payment purposes. In this analysis, we calculated the encounter price by multiplying the hospirals' charges for all encounters rendered by the clinic-specific cost-to-charge ratio.

c. Estimation of Costs Due to Change in Access and Enrollees

In the previous section. we measured the price effects of the clinics by pricing some quantity of services under the two different pricing methods. In order to measure the change in access, we need to measure the change in quantity. holding prices constant. Hence, we measure:

$$(12) \qquad Price_E^{1994} \, Quantity^{1994} - Price_E^{1994} \times Quantity^{1991}$$

The above equation measures the change in the volume of care. As noted earlier. however. the change in volume consists of two components: (1) increase due to increased access to care (encounters per Medicare or Medicaid enrollee), rind (2) increases due to increased number of enrollees. Hence, we want to decompose the quantity measure as:

(13) $$Quantity = Encounters\ per\ Enrollee \times Enrollees$$

Substituting this into equation 12, we obtain:

(14) $$Price_E^{1994}\left(\frac{Encounters^{1994}}{Enrollees^{1994}} \times Enrollees^{1994}\right) - Price_E^{199\,4}\left(\frac{Encounters^{1991}}{Enrollees^{1991}} \times Enrollees^{1991}\right)$$

Rearranging this we get:

(15) $$\underbrace{Price^{1994}\left(\frac{Encounters^{1994}}{Enrollees^{1994}} - \frac{Encounters^{1991}}{Enrollees^{1991}}\right)}_{(a)} + \underbrace{Price^{1994}(Enrollees^{1994} - Enrollees^{1991})}_{(b)}$$

The first term (a) is our estimate of the changes in costs due to changes in access to care. The second term (b) is the change in cost due to changes in the number of enrollees.

d. Data Issues

The cost simulations measure the volume of care using the same data files built for the analysis of access to care. To obtain physician pricing information, we used the:

- California Procedure Formulary File

- Texas Procedure Formulary File
- Annual Physician Fee Schedule Transition Payment Amount (1994)

For the Medicare data, since the payment amount is determined by the pricing locality of the provider, we matched the pricing locals of the clinic providers with the appropriate rates for services in that local.

Because we were using the quantity of services rendered in 199 1 and the prices from 1994, some procedures did not have prices associated with them. In the majority of the missing services, this was due to the physician coding changes that took place during this period. We developed a cross-walk between the 199 1 codes and the 1994 codes, and used the 1994 prices that corresponded to the appropriate 1994 code. In the minority of the cases, there was no corresponding 1994 service code. In these cases, we used the median amount reimbursed from the 1991 period.

A further complication arose because hospital-based clinics, in some cases, used revenue codes in lieu of CPT codes to bill for services. In these cases. the revenue codes do not have corresponding payment prices. In these cases, we used the median reimbursement amount for the revenue codes from 1994.

To price the amount of the encounter. we used the cost reports obtained from the clinics during the site visits. For freestanding clinics, we used the settled amount reimbursed per encounter. For. the hospital-based clinics, we used the cost-to-charge ratio for the individual hospital clinics, and multiplied this cost by the charges rendered in each encounter.

e. Estimation of Practitioner Costs

To estimate how much the additional providers would cost the Medicaid and Medicare programs, we did the following:

1. Multiply the increased number of practitioners times the median salary for that provider type-nurse practitioner, primary care physician assistant, and primary care physician. Median salaries were from the Medical Group Management Association Physician Compensation and Production Survey.

2. Multiply the salary levels by 2 to reflect the physician practice costs. This estimate came from 1994 AMA data that show mean physician income (after expenses before taxes) is $182.4. Mean professional expenses are $183.1 (AMA, 1996). Thus, total practice costs are 365.5--double the mean physician income.

3. Multiply this figure by the clinic's share of Medicare and Medicaid patients.